REPORT

OF

THE SECRETARY OF WAR.

DEPARTMENT OF WAR,

December 2, 1837.

SIR: In compliance with your instructions, and in conformity with established usage to present annually to you, for the information of Congress, a statement of the transactions of this Department, together with such suggestions in relation to the various subjects under its administration as the public interests may seem to require, I have the honor to submit the following report.

It will be seen, by the statement of the Commanding General, that the principal part of the regular forces has been drawn from the posts on the frontiers and concentrated in Florida; and his account of the military transactions in that Territory will exhibit the progress of the war to the close of the last, and the events attending the commencement of the present campaign. The proposals made by the Indians to submit to the terms of the treaty, and the negotiations entered into with them to this effect, caused the cessation of hostilities at a period when they might have been carried on to advantage.

This measure on the part of the General commanding the army of the South, although productive of delay and increased expense, was dictated by humanity and a laudable desire to avoid, if practicable, the necessity of further enforcing, by arms, the execution of the treaty, and was approved by the Department. Nor can any just blame be attached to the conduct of that officer for keeping his faith with the Indians, and rather suffering himself to be deceived by them, than to violate his engagements, by securing the chiefs who had entered his camp and placed themselves in his power, under the pledge of receiving his protection.

The enemy proved faithless, and the season for active operations passed away without any important results. Great expense was incurred in preparations for the removal of the Indians, which their treachery rendered abortive. But the honor of the Government, which is beyond all price, was preserved; and it is satisfactory to know that the renewal of hostilities has only taken place after every effort had been tried, in vain, to persuade these deluded people to submit peaceably to the execution of the law. It is unnecessary to recapitulate the circumstances which led to this war; they are already well understood: but it may be important to state the causes which have enabled an enemy, so inferior in number and resources, to baffle the efforts of the Government to subdue them, and which have rendered the contest not only so disastrously protracted, but so very expensive. The theatre of war, remarkable for

its natural difficulties, was entirely unknown to the commanding officers of our army. They were compelled to move their forces with the utmost caution, in the face of a bold, active, and wily foe, thoroughly acquainted with the passes of the rivers and morasses which intersect the country, and who hovered about their flanks, concentrating their numbers upon a point of attack with unexampled rapidity, and flying from the open ground with a swiftness that baffled the pursuit of the white man. The difficulties of transportation, on which the success of all military operations must depend, always great, and in such a country involving unusual labor, expense, and delay, were in some cases insurmountable. In several instances, when within reach of the enemy, our troops were compelled to fall back upon their magazines or baggage trains for supplies, and thus lose the opportunity of striking an effective blow, because the subsistence stores could not be brought up for their use. Whenever it was possible, supplies were transported by water to points near the theatre of operations; but having to ascend rivers, steamboats were necessarily employed at an enormous cost to Government. From these points the transportation became still more expensive as well as difficult and dangerous. Numerous and well-appointed escorts had to be furnished; wagons to be dragged over pathless tracts of spongy pine barren, through almost impassable swamps and across marshy rivers; temporary magazines to be built; and posts to be established in the wilderness, to which further supplies of provisions and forage were to be brought; for the country is entirely destitute of both, and the baggage train can transport its own forage for a few days' consumption only. When it is considered that these difficulties had to be encountered and surmounted by raw, undisciplined troops, in the face of an active enemy, that destroys unseen, delivering a deadly fire at an unexpected moment, and disappearing in morasses impenetrable to the eye of the white man, the zeal and persevering courage of our officers and men are worthy of all praise. It is under such circumstances that our Indian allies have proved so useful. Their peculiar sagacity in detecting the stratagems of their race, and their untiring vigilance and activity in the field, are the best protection against the ambuscades, night assaults, and surprises which constitute the warfare of these tribes, and are so harassing and destructive to our troops. To the strong arms and brave hearts of our own men we may safely rely for victory in action; but we must depend upon the Indian to detect the lurking-place of the Indian; to trace him in his devious path and rapid flight; to guard against his wily approach, and to discover his deadly presence at every difficult pass. For these reasons the friendly Creeks were employed in the army of the South, during the last campaign; but as it had been found necessary to retain their families at great expense, until they could all be transported together to the West, they were discharged, and are on their way to their new homes. Before their departure, measures were taken to supply their place by engaging Indians of other tribes. In extending the necessary orders, a clerical error was made, by which the Indians were offered higher pay than the law allows to volunteers. The error was corrected as soon as discovered; but as about two hundred men have been brought to Florida under the first instructions, I beg leave to suggest that an appropriation be asked of Congress to enable the Department to pre-

serve its faith with these Indians; which I venture to hope will not be refused.

Another cause of unusual expense is to be found in the character of the troops employed. At first, they were draughted men, or volunteers engaged for so short a period of service as to render their employment not only expensive but inefficient; and when they were engaged for a longer time, the inexperience of their staff officers occasioned great and unnecessary expenditures, while the description of force, chiefly mounted men, augmented very much the cost of the campaign. The remuneration this irregular cavalry received from Government, merely for the use of their horses, amounted, in six months, to a sum nearly, if not quite, equal to their real value. The Government has had, besides, to pay a large amount for horses that perished for want of forage, which the state of the country rendered it impracticable to transport in sufficient quantities for the supply of so large a body of cavalry. The irregular force thus employed in Florida, during the campaign of 1836, amounted to about ten thousand men, one-half of which were cavalry, at an expense greatly exceeding that of regular troops, and by no means so efficient as one-half the number of that description of force.

Notwithstanding the experience gained during the last two campaigns showed the great cost of employing volunteers, the Department had no alternative but to engage them again, which the patriotic offers of the citizens from every part of the country enabled it to do. The nature of the climate of Florida requires that the active operations of the campaign should be concentrated into a short period of time, and this can only be effected by bringing into the field a much greater number of troops than would otherwise be necessary. The regular force, although collected from every point, was deemed inadequate; and resort has been had to militia, in order to make up, with the regulars, four columns, having each the component parts of an army sufficient to encounter the whole force of the enemy, and destined to move into the interior of the peninsula from distinct points of the coast. Added to these means of offensive operations, the squadron on that station may confidently be relied upon to scour the coast, and intercept all communication from without, and in every way practicable to contribute, by its coöperation, to the success of the land forces.

Throughout the whole conduct of this war, the West India squadron has coöperated with the army in the most active and efficient manner, not only by promptly furnishing every aid which the appropriate duties of that branch of the service required, but by the officers taking upon themselves the defence of posts on shore, and lending the aid of their professional skill in every situation in which it could be usefully applied, with that persevering courage, zeal, and ability which have at all times distinguished our gallant navy. The revenue cutters, placed under the command of the commodore of that squadron, have likewise rendered the most efficient service under the direction of that excellent officer. Part of the marine corps, which volunteered its services in Florida, and distinguished itself during the last campaign, still remains there; and it is hoped that they may be permitted to continue their valuable services to the army of the South until the close of the war.

The events of this war, and the heavy expenses attending it, have

shown the propriety, and even necessity, of increasing and organizing the staff, and of augmenting the army of the United States. In the last annual report from this Department this measure is strongly recommended, and the reasons for its adoption ably urged. I do not think, however, that the manner of augmenting the forces proposed by the bill, which received the favorable action of one branch of the Legislature, ought to be carried into effect. The organization of the army when it was reduced to the peace establishment, ought not to be abandoned. It is fitted to render the greatest service in time of peace, and to afford a basis for the augmentation of the effective forces of the country to a much greater extent in time of war. This arrangement should not, therefore, be disturbed, but the same system carried out in making new levies. I would recommend the addition of three regiments of infantry, and one company to each regiment of artillery, and that the companies, both of artillery and infantry, should be increased to sixty-four rank and file, with authority vested in the President to augment their number, not to exceed one hundred men, whenever the exigencies of the country may require it. This would secure all the advantages of the present peace establishment, and enable the Executive, on any sudden emergency, to place the army on a respectable footing of defence.

Sound policy and an enlightened economy equally require that every department of the staff of the army should be augmented. A properly organized staff would have rendered the conduct of the war in which we have lately been engaged both more effective and more economical. As the army is now constituted, officers are drawn off for staff duties, to the great injury of the service of the line, and these duties are by no means so well performed as they would be by officers properly instructed and entirely devoted to them. The present organization does not give to regiments or companies any supernumerary officers. They are no more than the performance of the various duties of their military command actually requires, and, to reduce the number, must weaken the army, render it irregular and inefficient in its operations, and greatly impair its discipline. Such, however, is the present defective state of every branch of the staff, that all are supplied from subalterns of the line. The departments of the Quartermaster General, the Commissary General, the Engineers, the Ordnance, the Paymaster General, and the Topographical corps, are all compelled to make draughts from the line of the army for the performance of their indispensable duties; and the returns of the Adjutant General's office of the regiments in the field during the last campaigns in Alabama and Florida, exhibit a lamentable deficiency of officers to fulfil the duties properly belonging to them.

The Quartermaster's department requires not only some enlargement, but the addition of higher grades, to render it adequate to the duties required of it. The functions of this branch of the staff, comprising, as they do, the quartering, supplying, and moving the army, with all its stores, and the execution of various objects of national improvement, are important at all times; but they become peculiarly so in seasons of active operations, like the present, when large bodies of irregular troops are necessarily called into service to aid our limited regular force.

The deficiency in the number of officers provided for this service has been sensibly felt from the commencement of our late border disturbances, and especially during the past season; and with respect to high-

er grades than those now authorized, experience has clearly shown the necessity of some clothed with the adequate ranks to enable them to take the charge of remote districts, and supervise the expenditure, and direct and control the complicated operations of the Department in the field. It is certain that there can be no effective military operations without a high degree of efficiency in that branch of the staff which is to move and supply the army. I would, therefore, recommend the addition of some officers of rank, with a limited number of that subordinate but useful class of agents—forage, wagon, and barrack masters.

The department of the Adjutant General is entirely inadequate to perform its appropriate duties, even to our small army; and I respectfully recommend that it be enlarged, so as to supply Assistant Adjutants General to each division and department of the army.

Since the establishment of the Commissariat of Subsistence, great regularity and economy have been introduced in furnishing the supplies of the army; but, in order to render it more complete, and to enable it to perform all the duties assigned to it in the most economical and efficient manner, I recommend an addition to the present establishment of at least four officers.

I would recommend an immediate increase of the corps of topographical engineers. The extensive range of duties which have of late years devolved upon this corps, renders its increase a matter of necessity as well as of economy. It is physically impracticable, as the corps is now constituted, to obey the injunctions of Congress. Important surveys are neglected; works of improvement are slowly and imperfectly carried on, and the expectations of the country disappointed.

By a reference to the statements of the officer at the head of that branch of the service, it will be seen that the entire corps consists but of ten officers; and to these it has been found necessary to add, during the present year, about thirty individuals, employed as civil engineers, at compensations greater than are allowed to military engineers; thus making the entire cost of this branch of service much greater than it would be in the form of a properly organized corps. In addition to this consideration, discipline and a proper subordination cannot be introduced in a mixed service, where the smaller part only is subject to the Rules and Articles of War, the greater being entirely exempt, and without those positive distinctions of authority and of rank upon which discipline so eminently depends.

The duties of this corps require the combined knowledge of the military and civil engineers. Their military duties consist in surveys for the defence of the frontier, inland and Atlantic, and of positions for fortifications; in reconnoissances of the country through which an army has to pass, or in which it has to operate; the examination of all routes of communication by land or water, both for supplies and for military movements; the construction of military bridges; the position and erection of field works; the defences of encampments, fords, ferries, and bridges. For these purposes topographical engineers should always accompany armies in the field; and, without their aid, the organization of a staff is defective and incomplete. Their civil employment consists in the survey of the coast, rivers, harbors, bays, and watercourses, in order to their being improved for commercial and other purposes, and in superintend-

ing the various works for these improvements; in surveys of roads and canals under the law of the 30th of April, 1824; and in conducting all civil constructions connected with the commerce of the country, and such international communications as Congress may direct. This brief recapitulation of the various military and civil duties of the corps clearly points out the necessity of its complete organization, and indicates the propriety of attaching it to the general staff of the army. The direction of all the works, both civil and military, herein described, properly belongs to this branch of the service. A simple enumeration of the functions of the Quartermaster General will show that the duties of his office cannot be performed without the assistance of the officers of the topographical corps. They are to ensure an efficient system of supply, and to give facility and effect to the movements and operations of the army, which cannot be accomplished without a thorough knowledge of the topography of the country. It is his duty, likewise, to select sites for encampments, and to assign to the different corps the ground they are to occupy; a duty which requires the aid of topographical engineers, as does the superintendence of the works at the several posts, the construction of military roads, the acquisition of such knowledge as the department is expected to possess with regard to the military resources of the country, the means and facilities of transportation, the state of the frontiers, with the most eligible points for concentrating troops and collecting supplies, whether in relation to offensive or defensive operations. This information cannot be obtained without the active coöperation of the topographical corps.

I cannot dismiss this subject without adverting to the opinion of my predecessor, in relation to the employment of the topographical engineers of the army, by States and incorporated companies; in which I fully concur. At a period when it became a practice of the Government to permit these officers to aid in the construction of the public works in the several States, the description of talent and knowledge which they possessed was uncommon in our country, and works of great public utility would have been suspended or abandoned altogether if this permission had been withheld. A different state of things now exists. The demand for civil engineers has created them; and not only is it no longer necessary to aid States and companies, by lending them officers of the army, but, in doing so, an act of injustice is committed towards the civil engineers of the country. There can be no doubt that the practice impairs, very sensibly, the efficiency of the corps as a branch of the army, and deprives the Government of their services for military surveys and the erection and superintendence of works of national utility. The commander of the army of the South says, emphatically, in a late communication to the Adjutant General, "Had the topographical engineers been employed in their appropriate duties in Florida only one year of the sixteen since we obtained possession of the country, from two to three millions of dollars might have been saved in the expenditures of the war." The ignorance of the topography of the country, here complained of, exists with regard to other important regions of our country, which will, probably, sooner or later, become the theatres of war; and I earnestly hope the Department will have it in its power to remedy this defect by confining the members of the corps to their appropriate duties, of examining and surveying the country, for the purposes of national improvements and national defence, and superintending the erection of national works.

Having stated the increase which appears to me indispensably necessary to render the several parts of the general staff of the army effective, it becomes my duty to submit to your consideration the defects of the present system, and to suggest a better organization of this most useful and important branch of the service. On examining the functions of each of the separate divisions, it will be seen that in the moving and subsisting the army, providing for clothing and supplies, including transportation, barracks, camp equipage, and all things necessary for the health, comfort, and efficiency of the troops, the duties of every branch of the general staff are so connected and dependent upon each other, that the best-planned measures may be defeated by the failure or neglect of any one of them. Notwithstanding which, they are distinct bodies, entirely independent of each other, differently organized, governed by different regulations, and, although purely military in their functions, depending only upon the civil authority at the head of the Department of War. Such an arrangement is complex and incompatible with the uniformity and subordination which ought to distinguish the organization of every branch of the military service. I recommend, therefore, that there be created a staff corps, to consist of one brigadier general, (chief of the staff,) six colonels, six lieutenant colonels, eight majors, twenty captains, and twenty first lieutenants, who shall exercise all the functions and perform all the duties at present exercised and performed by the Quartermaster General, Adjutant General, Inspectors General, Commissary General of Subsistence, and their assistants; and also by the topographical engineers and assistant topographical engineers; and that the Commissariat of Purchases and the Medical staff of the army be attached to the said staff corps: thus uniting under one head a homogeneous body, sufficiently numerous to ensure promotion within itself, create an *esprit du corps*, excite emulation, and keep alive hope. This organization, at the same time that it secures uniformity and efficiency to the operations of the staff, is entirely compatible with its present division into separate bureaus, and will not disturb the existing relations of the present officers of the corps with the branch to which they are now attached.

This increase of the rank and file and staff of the army here recommended, by which its efficiency would be greatly augmented, and its administration rendered much more economical, has become necessary, independently of the causes assigned, from our greatly extended frontier, from the number and description of our maritime fortresses, and from the large body of Indians which the humane and enlightened policy pursued by the Government towards that people has concentrated upon our Western borders. When in 1821 the army was reduced to 6,127 men, the extent of our frontier did not exceed 6,373 miles; along the inland portion of which the Indian tribes were sparsely scattered, a large proportion of their numbers being within the States, and rendered harmless by the surrounding white population; and the maritime frontier was occupied by a few inconsiderable forts. Since that period, its extent has been increased, by the acquisition of Florida and other causes, to 8,500 miles; most of our principal harbors and bays have been fortified by extensive works, and the Indians concentrated upon the Western line so as to present a front of not less than 45,000 warriors. The protection due by the Government to the inhabitants of this extensive and

exposed portion of our country would require a much larger force than is here proposed, if their safety were made to depend entirely upon the regular army; and I would respectfully recommend the construction of a chain of permanent fortresses along that line, and a competent organization of the militia of the frontier States, as important and necessary auxiliaries for this purpose. If any danger is to be apprehended from an army of 15,000 men, scattered along a frontier of more than 8,000 miles, and commanded by officers educated to reverence the laws and cherish the freedom of their country, it is effectually to be guarded against by a proper organization of the militia. Their aggregate force, now, is little short of a million and a half of men; and whatever may be their efficiency against a foreign enemy, they may always be relied upon when the liberties of the country are assailed.

That the necessity of this measure may be fully understood, I have annexed statements, furnished by the Chief Engineer, exhibiting the number and names of the different fortifications completed and under construction, and the full armament and amount of force which each requires to arm and garrison it; of the works projected by the board of engineers, but which are not yet commenced; and for the prominent points along the sea frontier which require protection, and for which no plans or *projets* have yet been made; and a list of the posts on the inland frontier of the United States, with a notice of the garrisons deemed necessary for them in time of peace, and to preserve peace, furnished by the acting Quartermaster General.

The measures of defence for the border settlements, which the policy of the Government towards the Indians has rendered it their imperative duty to adopt, have engaged the anxious consideration of this Department, and the matter will be fully treated in answer to a call of Congress for information on that subject.

The report of the Chief Engineer, which is herewith submitted, contains a summary of the numerous and important works under the superintendence of this branch of the service. It is manifest, from a review of this document, that some further increase of this corps is rendered necessary from the great accumulation of the public works confided to its charge. But the high order of talent, united to great acquirements, which have hitherto distinguished this corps, and which are required in the discharge of duties involving not only large expenditures, but in many cases the safety and honor of the country, demand that this should be done with the utmost caution. The youth who exhibit the greatest aptitude for such studies, and who, in their progress through the Military Academy, distinguish themselves above their fellows, and are deemed worthy to enter this corps by those who are appointed by Government to decide the relative merit of the candidates, ought alone to be added to it; nor should they be placed in charge of any work until they have been at least two years assistants to some older and more experienced officer. It is due to this corps to say, that their pay and emoluments are insufficient for their support. Performing duties that require the exercise of talents and attainments which, in civil life, command the highest rate of remuneration, and in a manner honorable to themselves and useful to the country, they receive a less amount of pay than any other branch of the service. I beg leave, therefore, respectfully to recommend that the officers of this corps be placed on the same footing as those of the

cavalry of the United States. A proper regard to the interests of this branch of the public service induces me to recommend the appointment of an inspector of fortifications, with the rank of colonel, whose duty it shall be, under the orders of the Chief Engineer, to make regular and systematic inspections of all the fortifications and public works under the superintendence of that officer.

The very important work of deepening the channel at the mouth of the Mississippi has not yet been commenced. Three plans were submitted by Captain Chase, of the engineers, who was intrusted with the necessary examinations: first, by deepening one or more passes by dredging; secondly, by closing all but one pass where they leave the trunk of the river; and thirdly, by cutting a ship channel from the river. The Engineer department suggested the propriety of adopting the first plan as the least costly and the soonest executed; and preparations were made, and all things in readiness to commence the work by the middle of December. In consequence, however, of representations received by the Department from the New Orleans Chamber of Commerce, the whole matter was submitted to a board of engineers consisting of Colonel Totten, Colonel Thayer, and Captain Chase; who have required further preliminary surveys, in order to enable them to form a correct opinion as to the character of the works most likely to be successful in improving the navigation of the mouths of this river; a request which, considering the very important nature of the works, and their bearing upon the commerce of the whole valley of the Mississippi and its tributaries, has been acceded to by the Department.

The operations on the great raft in the Red river closed on the 25th of May, for want of funds, with the exception of one boat, which worked until the end of June.

During the season, twelve miles and a half of this dense mass of wood, comprising the remaining portion of what is styled the old raft, have been removed. The part now remaining, being four hundred and forty yards in length, was formed by the freshet of 1836, and is by no means so dense or difficult to remove; and the timber of this portion of it will be employed to stop up the only bayou which now remains to be closed. It is estimated that the cost of completing the operation, which will effectually open the navigation of this river throughout its whole course, will amount to fifty thousand dollars. If the appropriation be made early in the next session, the work may be completed, or nearly so, by May next; otherwise it must lie over until the autumn of 1838, to the serious injury of the increasing population of the valley of the river, and to the great detriment of the work itself, from the constant accumulation of drift timber which must necessarily take place until there is a free current in the river. If the work be delayed, the superintendent estimates that the increased expense from this cause alone will amount to twenty thousand dollars.

The act of the 2d of July, 1836, which appropriates $100,000 for surveying and opening a military road along the Western frontier, imposes on the President the duty of selecting situations near it for the military posts which, in his opinion, may be most proper for the protection of the frontier, and for the preservation of the necessary communications. On taking up this subject for consideration, it appeared manifest that the

conditions of defence, which it is supposed Congress had in view in making this appropriation, could not be fulfilled if the road were surveyed and opened before the sites for the permanent military stations were determined upon; as, without a knowledge of their ultimate position, the road might not approach them sufficiently near to afford "the necessary communications" contemplated by the act.

The selection of these sites has to be made without regard to lateral communications, but with a view to the tribes in front, and to the facility of approach from the rear. I am also of opinion that the contemplated communications, in reference to the security of the fortresses, and the protection of the borders, ought to be perpendicular to the line of defence, and not lateral.

Parties are now making the required examinations, and, as soon as they are completed, and the sites for permanent posts determined upon, the survey and works for opening the road, designated by Congress, will be commenced; unless, upon a review of the subject, they may think proper to adopt the plan of defence for the Western frontier, which, as has been before observed, will be presented to them, in accordance with a resolution of the Senate to that effect.

The state of Charleston harbor demanded and received the early attention of the Department. It was represented that Sullivan's island was being washed away, and the channels, which form the entrance of the harbor, filling up with the sand from its beach. By direction of the Engineer department, a minute examination of the situation of the island was made in June last, by Lieutenant Mansfield, who submitted a plan for its protection against the encroachments of the sea that was approved by this Department.

It is stated, in the report of the engineer, that the island and southwestern peninsula will be entirely carried away by the action of the currents and storms, unless timely measures be adopted to arrest the progress of destruction; that this island shelters the port of Charleston from the fury of the northeastern storms; and that its destruction would expose the harbor to the violent gales of the autumnal equinox, by leaving it open from northeast to southeast, besides the probability of lessening the depth of water on the bars.

Independently of the necessity of the proposed works for the preservation of the port, they are essential for its defence. The island forms the site of Fort Moultrie, which checked the approach of the British squadron during the revolutionary war, and now constitutes, in conjunction with Fort Sumter, the only defence of this important harbor. These considerations induce me to recommend that an appropriation be asked of Congress to commence these works without delay.

It is my duty to call your attention to the present state of the works for the protection of the waters of the Chesapeake. Fort Monroe will require further repairs and new works to render it even defensible. One front of the fort is peculiarly liable to attack, for it is more exposed to a *coup de main* than any other, and is, at the same time, the only front liable to siege, and the only one exposed to land batteries within reasonable distance. The works intended to protect this front were commenced, and a large body of earth collected to complete them, and so arranged as, in some measure, to shelter the vital parts until the whole should be completed.

From some misunderstanding, without the knowledge or participation of the Engineer department, this mound was levelled. Earth has also been placed upon the parapet wall. These operations have proved injurious to the works, and immediate measures must be taken to repair the evils they have produced. In loading the parapet, it was found that the masonry was not sufficiently dry and consolidated to bear the pressure of the great superincumbent weight; and although, from their original strength and solidity, the walls have not yet sustained any material injury, still it is of a nature to call for prompt repairs. I recommend, therefore, that proper measures to protect this fort from a *coup de main*, to which it is now so evidently exposed as to invite attack, be adopted without delay, together with the necessary repairs to strengthen the existing works.

From an examination of the state of the works at the Rip Raps, it appears that the subsidence of the artificial foundation of stone, on which it is intended to erect Fort Calhoun, has not yet entirely ceased; and orders have been given to replace the mass of materials, collected for the completion of the fort, upon the arches, in such a manner as to render the subsidence uniform; and, when this is done, it will be prudent to leave it there for some time longer, before recommencing the works.

The great difficulty which has been experienced in fixing upon a suitable site for the new fort ordered to be constructed on or near the Arkansas frontier, and in determining its precise position, has occasioned unusual and unexpected delay in the commencement of the work. The commissioners appointed to make the selection by my predecessor being military men, fixed upon a site with a single eye to its military properties; whereas it is believed to have been the intention of Congress to erect a fortress, which should serve as a refuge for the border settlers, who are exposed from their situation to the hostile incursions of the Indians; and it became necessary to direct a subsequent examination in order to meet that object. A board of competent officers was accordingly appointed, and proceeded in the execution of this duty. Their report may be looked for daily, and the work will be commenced as soon as the situation is fixed upon by the Department.

From a variety of causes, not necessary to recapitulate here, but chiefly from a disputed title, which has been only recently decided by the courts, the land on which Fort Delaware is situated has not yet been acquired by the Government. The Pea-patch island might have been purchased when the fort was projected for, comparatively, a small sum, and, since the commencement of its construction, was offered to the United States for a slightly advanced price. Since the decision in their favor, one hundred thousand dollars, with interest from that date, are asked for it by the proprietors; and it remains to be decided whether this large sum shall be paid for the land, or the works be abandoned.

The importance of having a fort upon this island, in order to protect the harbor of Philadelphia, has been recognised by every board of military engineers that have examined the subject. It is the lowest point at which, in connexion with works upon the main land, Philadelphia is defensible; and, while it covers that harbor, Chester, and Newcastle, prevents an enemy from finding shelter in Delaware bay, secures the debouché of an important link in the great inland chain of water communication,

the Delaware and Chesapeake canal, and covers the extensive powder manufactories near Wilmington. For these reasons, it is important that the United States should possess it; but whether it is to be acquired at the price now asked for it, or after an equitable appraisement of its real value, is a subject to be decided by the wisdom of Congress. In the mean time, the works in progress there will render its abandonment more costly hereafter, and may enhance still further the value of the island. An early decision is, therefore, highly desirable.

The ordnance corps, organized in 1832, requires some enlargement, in order to render it efficient. At present there is not an officer to superintend each arsenal, and it appears to me that the public interest will be promoted by the addition of two majors and ten first lieutenants. But, above all, this branch of the service demands the creation, by law, of a mixed board of artillery and ordnance, to be composed of officers of rank and experience, to digest a general system of ordnance and small-arms for the use of the United States. Similar boards have been formed, from time to time, by regulations of the War Department; but experience proves the necessity of some legal enactment to ensure the due performance of this important duty, for up to this time there exists no general system, such as I propose, and such as is absolutely necessary to place this branch of the service on a level with that of other countries, and preserve it there.

Doubts having been entertained by my predecessor in office of the power of the Department to enter into contracts for supplies of cannon and arms without previous advertisement, it has become the practice of the Ordnance office to make informal arrangements with the proprietors of foundries and manufactories of arms to receive a certain amount of cannon and muskets on inspection, at a settled price; an engagement equally binding as a written contract on the part of the Department, but uncertain in its obligation upon the manufacturer. The former method, of contracting for limited periods is, in every respect, preferable. These establishments require expensive preparations, and, having no other market than that afforded by the demand of Government, ought to have some assurance of the articles they may manufacture being taken off their hands. A contract for a limited period gives this assurance, enabling them to secure the most competent workmen, and encouraging them to render their machinery as perfect as possible. A recent opinion of the Attorney General declares this method to be legal, and it will be followed in future, unless prohibited by legislative enactment. The existence of our own armories enables the Government to establish a standard of comparison to which the private manufacturers are compelled to conform, and secures the acquisition of good arms at equitable prices. With the same view, the establishment of a national foundry has been frequently urged; and I beg leave, respectfully, to repeat the recommendation. It is not intended that this establishment should, at once, furnish the amount of cannon and projectiles required; but it would enable the Ordnance department to make the necessary trials and experiments so as to determine the proper mixture of metals to combine the greatest strength with the greatest lightness, and produce the most perfect models. This would secure, at all times, a sufficient supply of the best arms at fair prices. Intending to submit a plan by which the casting of cannon and

projectiles, and the manufacture of gunpowder, shall be placed under the supervision of a joint board of the united service of army and navy, the proposed establishment will, if adopted, be made useful to both branches of the service.

The erection of a manufactory of small-arms west of the Allegany mountains, cannot be too strongly recommended. The transportation of the armament required by the Western portion of our Union is very expensive, and ought to be avoided. It appears to me that the establishment best suited for that country is one for finishing, polishing, and putting together the several parts of the muskets to be made by individual artisans, after models furnished them by the superintendent, and received on inspection. In this manner the works can be curtailed or extended to any amount that may be required, without inconvenience, and this description of manufacture become familiar to a large class of mechanics. The buildings and fixtures, suitable for this purpose, would be much less expensive than those of the present national armories, and, unlike them, the number of arms fabricated might be increased tenfold without requiring any addition to the original establishment. This armory might embrace the manufacture and inspection of rifles for the supply of the friendly Indians, of which numbers are now purchased annually.

Disputes have arisen with persons who withhold the rent-lead due by them to the United States, under the terms of a license to smelt lead ore on lands belonging to Government; and, on full consideration of this subject, I think it my duty to state that, in my opinion, the reservations of the lands in the lead region, and the plan now pursued of collecting rent on their produce for the use of Government, whatever may have been its former advantages, is now prejudicial to that portion of the country where they are situated, and injurious to the interests it was intended to foster. Individuals will not engage in extensive, systematic, and costly works, such as are required in mining operations, without some better security than a mere license for smelting ore. Nothing more is done, therefore, than to scarify the surface of the earth; and the mine is given up at a time when it yields most ore, because its further extraction would require an outlay not justified by the tenure of the land. The miner then removes to another spot, where the same process is followed, and the whole region is dotted over with these imperfect and abandoned works: whereas, if these lands were brought into market, to be sold at moderate prices, in small tracts, to those who will actually settle there and work the mines, they might be purchased by enterprising and industrious individuals, who would erect permanent works, develop fully the mineral resources of that region, and render iron and lead so abundant and cheap, that Government would be benefited by the reduction in the price there of articles of which it is so large a consumer, as well as by the general improvement of that portion of the country. For these reasons, it appears expedient that authority be asked of Congress to dispose of these lands; and, also, of all ore banks and lands containing minerals of any description whatsoever, under the control of the War Department.

The accompanying report of the Commissioner of Indian Affairs contains a full and lucid statement of the various and important matters under the control of that office. The complicated and arduous duties of

that branch of the War Department have been performed in a manner highly creditable to the officers charged with their execution; but there are some important subjects connected with these duties which require the early attention of Congress. The Commissioner represents "that the present system of disbursing, through the agency of military officers, has proved inconvenient, in consequence of their frequent transfer to other duties;" and it is, in my opinion, liable to still stronger objections, as it imposes upon these officers duties foreign to their profession, and of great responsibility; abstracts them from their regiments, and, not unfrequently, unfits them to return to them. I would recommend that this method of disbursing these funds be abandoned, and a sufficient number of civil agents be appointed, so that disbursements may be made by persons giving bond for the faithful discharge of their duties. I concur with the Commissioner in the propriety of providing by law for the more liberal compensation of agents and interpreters. On their faithful execution of the trusts reposed in them depends the success of all our efforts to civilize the tribes and maintain the peace of the frontiers; and the price now paid for such important services is not equivalent to that received by the same class of persons in the employment of trading companies, whose interests are not, I am sorry to say, identical with those of the Government, and whose conduct too frequently counteracts the humane policy of the United States towards the Indians.

In accordance with the opinion of the Commissioner, I would recommend the passage of a law by which all sums accruing on moneys invested for the use of the several Indian tribes be deposited in the Treasury, to be drawn out upon the requisitions of this Department in the usual form; and further, that the whole business connected with the investment of the funds for the interest of the Indians, and the management thereof, be transferred from this Department to that of the Treasury, to which it properly belongs.

Intelligence was received at this Department, early in the spring, that the Indians were in an unquiet state on our Northwestern frontier, and apprehensions were expressed that the hostile feelings which existed between the Sioux and Sacs and Foxes might endanger the peace of our border settlements. Sensible of the weakness of our forces in that quarter; having been compelled, from the state of our army, to strip both the inland and maritime frontiers of their garrisons, to supply the army of Florida with a sufficient regular force, it was deemed most prudent to bring down to the seat of Government the principal chiefs of those warlike tribes. It is believed to be important to exhibit to those people the strength of the nation with which they would have to contend in venturing to attack our defenceless borders, and at the same time to impress upon them the advantages which flow from civilization. With several of these tribes it was made our duty to treat; and it would have been in a high degree imprudent, in the excited state of feeling which existed among them, to assemble large bodies in the neighborhood of our ungarrisoned posts, thereby exposing our utmost weakness at a period when it was important to display our utmost strength. The superintendents were therefore instructed to invite them to send deputations of their chiefs to Washington; and, on their arrival here, treaties were negotiated with several of the tribes, by which large tracts of land have

been purchased, and the object so much desired by Government, to extinguish the title to all the Indian land east of the Mississippi, nearly accomplished. The Sioux of the Mississippi have ceded their possessions east of that stream, together with all the islands belonging to them, and are to remove to the western shore. The Winnebagoes have at length agreed to dispose of their lands in East Wisconsin, and retire to the neutral ground on the west of the river. It is probable that their sojourn there will be temporary, and therefore a portion only of the neutral ground has been allotted to them, with permission to hunt upon the remainder. The interests of the country appear to require the existence of a line of frontier States between the Mississippi and the Missouri; and the extinguishment of the Indian title to all the land east of the Missouri, to 43° of north latitude, would effect that object. With that view, the Winnebagoes would have been at once removed south of the Missouri, had the country been previously explored, and a tract of land of sufficient extent set apart for their future permanent residence. The situation of that tribe, fast sinking under the degrading influences which surround them, and pressed upon by the whites, renders it a measure of humanity to remove them promptly across the Mississippi; but they were given to understand that they were not to consider the neutral ground as their permanent home. A treaty, likewise, has been negotiated by Governor Dodge with the Chippewas, by which that tribe ceded a large tract of country east of the Mississippi, and have agreed to retire to lands west of that river.

A mistake had been committed by the surveyors of the United States in determining the boundary line of the land ceded to the Government by the confederated tribes of the Sacs and Foxes by the treaty of September, 1832; and it was immediately determined to do justice to the Indian proprietors of the soil, and correct the mistake. The true line, however, would have excluded a fine portion of country which was already settled and improved; and, whatever may be the ultimate policy the Government may think proper to adopt towards the settlers who improve new and unoccupied lands in order to acquire a title to them by future purchase, the Department is of opinion that, so long as custom and the practice of Government sanction their acquiring rights by such means, their claims ought to be respected; and therefore entered into negotiations with the Sacs and Foxes to extinguish their title to this strip of country. In doing so, it is deemed expedient to establish a line that will no longer be subject to doubt or dispute.

In this treaty, as in all the Indian treaties concluded at Washington, regard has been paid to the permanent benefit of the several tribes. Provision is made for the establishment of schools, as well as for instructing the people in the arts of husbandry, and for the investment of the purchase-money so as to secure to the Indians a perpetual rent; a portion of which is to be applied in such manner as you may deem most useful and beneficial to them. Much more remains to be done, in order to ensure the faithful application of the funds destined for the support and comfort of the Indians. It now appears that their annuities really go into the coffers of the traders, in payment of debts incurred, in a great measure, by the idle and dissolute, but which are charged to the whole nation, and paid out of the common fund. The

effect of such an arrangement is obvious: it encourages the vicious, and deprives the industrious of all incentive to exertion. The whole of this subject is of such vast importance, both as regards the condition of the tribes and the character of the Government, that I propose to treat it in a separate report, and to suggest such improvements in the existing laws and regulations as may ensure the faithful application of their funds to the individual wants of the Indians.

Of the propriety of persevering in the system of removing the Indians beyond the civil influences which surround them within the States and Territories, and which were fast working their destruction, there can be no doubt. In its origin, the Government appears to have been actuated only by considerations of policy and expediency; but, subsequently, a better spirit prevailed in our intercourse with the red men, and their removal from beyond the limits of the States and Territories, rendered imperative by the peculiar circumstances of their situation, was connected with liberal and beneficial provisions for the amelioration of their condition. From a frontier people, roaming free and unrestrained over trackless forests and extensive plains, and subsisting on the products of the chase, they had suddenly, by the rapid spread of the whites, become communities surrounded by an agricultural, enterprising, and enlightened people seeking to develop the resources of the country, and, in their eargerness to obtain possession of their lands, pressing them into the narrowest limits. Deprived of their only resource, from the diminution of the game, and incapable or unwilling to resort to agriculture for subsistence, their situation became deplorable, and their distress was still further aggravated by the decision which deprived them of the protection of the General Government, and extended the jurisdiction of the States over them. The inaptitude of the Indian character to conform to a state of society moulded and regulated by a system of laws based on the principles and habits of civilized life, and adapted to give security to its multiform pursuits and interests, all differing from their own, is obvious. The only alternative was, removal beyond the limits of the States; and the beneficent hand of the Government was extended to relieve that people from the operation of laws beyond their comprehension to understand or their ability to observe; and to remove them to distant lands abounding in game, and guarantied to them forever from the intrusion of the whites.

The results of this policy have surpassed the expectations of the most sanguine.

The reports of the superintendents represent the early emigrants as living in comfort and abundance, and improving in the useful arts; and hopes may now be entertained of the preservation of the aboriginal inhabitants of this continent, and of their gradual civilization.

Ample provision has been made for their education; and the only duty of the Government which remains undischarged is the formation of a suitable Territorial Government, and their admission to such a supervisory care in the general legislation as is granted by the laws to other Territories of the United States, and for the exercise of which they appear to be sufficiently prepared.

The subject is confessedly difficult and embarrassing; but the bill introduced into Congress at the last session, and partially acted upon,

would seem to offer a fair prospect of success, and to secure to these Indians the enjoyment of all the advantages of free government which the necessity of stretching over them the protecting arm of the Government will admit.

This scheme has been submitted to several of the tribes, and been approved by them, and may safely be carried into effect and remain in operation until experience shall point out the alterations and amendments it may require.

Having received information, early in the spring of this year, from sources to be relied upon, that the Camanche Indians had committed outrages upon our citizens, and carried off some women, whom they retained as prisoners, and that apprehensions were entertained of their committing other acts of hostility if their complaints were not listened to and their grievances redressed, instructions were given, with your sanction, to Mr. A. P. Chouteau, to repair to that country and ascertain the facts connected with these outrages, and the causes of complaint, if any really existed; to give assurances of ample reparation, and exact the same from them; and to obtain the release of the prisoners, and restore them to their families and friends. With a view, likewise, of preserving the peace of that frontier, Mr. Chouteau was instructed to invite this powerful tribe to send a deputation to Washington, that they might represent their own grievances, and at the same time become acquainted with the real strength and resources of the nation they have hitherto deemed lightly of, from seeing only a few posts thinly scattered along the frontiers and feebly garrisoned. It is understood that Mr. Chouteau has succeeded in this part of his mission. These measures of precaution were taken, from the necessity of the case, without any appropriation or legal provision for defraying the expenses; and I respectfully recommend that the subject be submitted to Congress for its sanction, and the necessary appropriations asked to enable the Department to discharge its obligations to Mr. Chouteau; and further, that a small sum be intrusted to the direction of the Executive, to be expended on emergencies like this, requiring prompt action to preserve the peace of the country.

The report of the Commissioner of Pensions shows the probable increase of the disbursements for the ensuing year, raising the estimate from $1,593,936 to $2,532,149, principally from the operation of the third section of the law of the 4th of July, 1836. It will be seen, likewise, from this report, that some legislative action is required to deter persons employed as agents of pensioners from defrauding them. This appears to be done both by withholding a portion of the money received in trust for the disabled soldier or destitute widow and orphan, and by charging them an exorbitant per centage for collecting the stipend awarded them by the bounty of the Government.

Although I do not concur in a former recommendation to extend the provisions of the pension laws to any other classes than those embraced by the acts now in force, I beg leave to reiterate that which proposes some legal organization for the purpose of establishing a fund for the support of invalid officers, and the widows and children of such of them as may die in the service. This may be done by making a moderate deduction from their pay, to such an amount and in such manner as may be agreed upon by the officers themselves. Similar provision may be

made in like manner for invalid and disabled soldiers, and the widows and children of those who die in the service, not now provided for by law. This provision will become more necessary should the period of enlistment be restored to five years—a change which cannot be too strongly recommended. It is unnecessary to enter into the details of these plans for providing for the support of invalid officers and soldiers and their families. They may be so framed as to obviate all the objections which have been urged against their adoption, and are called for by every consideration of policy and humanity. Intimately connected with this subject is that of the pay of the officers of the line of the army. The very proper increase of pay made at the last session of Congress for the civil officers serving in the several departments, conveys an acknowledgment of the necessity of increasing all salaries of public servants which are below a certain amount; a principle which applies with great force to the condition of the officers of the army. In pursuance of this policy, I would recommend a moderate increase of pay to soldiers, non-commissioned and commissioned officers of the artillery and infantry of the United States, from the rank of second lieutenant to that of lieutenant colonel. The high price of labor, the demand throughout the country for that description of talent possessed, in an eminent degree, by the officers of our army, and which commands the highest rate of remuneration, together with the enhanced cost of all the comforts and necessaries of life, render this measure just and necessary; and I confidently ask your concurrence to procure for it the favorable consideration of Congress.

In the present uncertainty which prevails on the subject of the intention of Congress permanently to prohibit by law officers of the army from claiming or receiving any remuneration for disbursing moneys, the different interpretations given to the act render its operation unequal and unjust. In almost all instances where the officers have withheld moneys and brought suits for the recovery of sums charged for commissions on their disbursements, the courts have awarded the full amount claimed; whereas those who have accounted for all they have received remain without any remuneration. If the proviso attached to the appropriation act of 1835, for the improvement of certain harbors, which prohibits any allowance to officers for extra-official duties and responsibilities, is intended to be permanent, it ought to be fully and explicitly stated, so as to bind the decisions of the courts of law. But, if Congress be of opinion that it is just to allow some remuneration for extra services, in cases where great responsibilities are incurred, then it would appear better to determine that compensation by law. I would by no means recommend that any allowance should be made for disbursing the usual and ordinary appropriations for the military service; but where heavy and extra duties are imposed upon officers, involving great risk from circumstances beyond their control, and against which no human precaution can protect them, it appears equitable that some compensation should be allowed, which, on every account, it would be better to fix by law.

By your instructions, in pursuance of the provisions of the act of the 3d of March, 1837, authorizing you to select and cause to be purchased, for the use and benefit of sick seamen and boatmen, and all other navigators on the Western rivers and lakes, suitable sites for hospitals, a commission of able and experienced surgeons of the army was appointed to discharge

this duty. The accompanying report shows that they have performed it with the zeal and ability which characterize this branch of the service; and the contracts made by them to effect the purchase of the sites selected would have been sanctioned by the Department, had the sum been within the amount appropriated by Congress for this purpose. The whole amount required will be $39,968, being an excess over and above the sum appropriated of $24,968.

The beneficent object intended to be accomplished by Congress in directing this examination, and the purchase of the several sites selected, will not, I trust, be defeated by this circumstance; and, in this hope, plans and estimates for the construction of the hospitals accompany this report.

All which is respectfully submitted.

J. R. POINSETT.

To the PRESIDENT *of the United States.*

List of documents accompanying the report of the Secretary of War.

No. 1. Statement exhibiting the number and names of the different fortifications completed and under construction, and the full armament and amount of force which each requires to arm and garrison it.
No. 2. List of works projected by the Board of Engineers, but not yet commenced.
No. 3. Statement showing the prominent points along the sea frontier which will require protection, and for which no plans or *projets* have yet been made by the Board of Engineers.
No. 4. List of the military posts on the inland frontier of the United States, with the garrisons deemed necessary for them in time of peace and for the preservation of peace.
No. 5. Report of the medical board appointed to examine and select sites for marine hospitals.
No. 6. Plans and estimates for the same.
No. 7. Report and documents of the Major General commanding the army.
No. 8. Report of the acting Quartermaster General.
No. 9. Report and statement of the Commissary General of Subsistence.
No. 10. Report of the acting Surgeon General.
No. 11. Report and statement of the Paymaster General.
No. 12. Report and statements of the Commissary General of Purchases.
No. 13. Report and documents of the Chief Engineer.
No. 14. Report and statements of the Chief Topographical Engineer.
No. 15. Report and statements of the Chief of the Ordnance department.
No. 16. Report and documents of the Commissioner of Indian Affairs.
No. 17. Report and statements of the Commissioner of Pensions.
No. 18. Statement of the officer in charge of the Bounty Land Office.
No. 19. Report and statements of the Third Auditor.
No. 20. Report and statements of the Second Auditor.

No. 1.

Statement exhibiting the number and names of the different fortifications completed and under construction, and the full armament and amount of force which each requires to arm and garrison it.

No.	Designation.	No. of guns.	Garrison.	
			Peace.	War.
	NEW FORTS COMPLETED.			
1	Fort Hamilton, New York harbor	130	50	650
2	Fort Lafayette, do	96	50	480
3	Fort Washington, Potomac river	79	50	395
4	Fort Macon, Beaufort, North Carolina	51	50	255
5	Castle Pinckney, Charleston harbor, South Carolina	21	50	105
6	Fort Morgan, Mobile, Alabama	161	50	805
7	Fort Pickens, Pensacola, Florida	252	100	1,260
8	Fort Pike, Rigolets, Louisiana	88	50	440
9	Fort Wood, Chef Menteur, Louisiana	88	50	440
10	Fort Jackson, do	156	50	780
11	Battery Bienvenue, do	32	50	160
12	Tower at Bayou Dupré do	24	50	120
		1,178	650	5,890
	FORTS UNDER CONSTRUCTION.			
1	Fort Warren, Boston harbor, Massachusetts	300	100	1,500
2	Fort Adams, Newport, Rhode Island	468	100	2,440
3	Fort Schuyler, New York, New York	250	100	1,250
4	Fort Columbus, &c., Governor's island, New York harbor	207	100	535
5	Fort Monroe, Old Point Comfort, Virginia	350	500	2,450

STATEMENT No. 1—Continued.

No.	Designation.	No. of guns.	Garrison.	
			Peace.	War.
6	Fort Calhoun, Rip Raps, Virginia	232	50	1,016
7	Fort Caswell, Oak island, N. Carolina	90	50	450
8	Fort Sumter, Charleston harbor, S. Carolina	300	100	1,500
9	Fort Pulaski, Cockspur island, Georgia	172	50	860
10	Fort on Foster's bank, Florida	144	50	720
11	Fort at Grande Terre, Louisiana	60	50	400
		2,573	1,250	13,265
	FORTS REBUILDING AND REPAIRING.			
1	Fort Independence, repairing, Boston harbor	79	50	395
2	Fort Delaware, rebuilding, Delaware river	250	100	1,250
3	Fort Mifflin, repairing, do	53	50	265
4	Fort McHenry, repairing, Baltimore harbor, Maryland	100	100	845
5	Fort Moultrie,* Charleston harbor	300	100	1,500
		782	400	4,255

* To be rebuilt—no plan and estimate of cost as yet submitted. The operations at present at this work are confined to the preservation of its site.

No. 2.

A list of works projected by the Board of Engineers, but which are not yet commenced.

No.	Designation.	No. of guns.	Garrison.	
			Peace.	War.
1	Fort at the Narrows of Penobscot, Maine, - - - - - -	145	50	500
2	Fort Preble, Portland harbor, " - - - - - -	82	50	300
3	Fort on House island, Portland harbor, " - - - - - -	53	25	260
4	Fort Pickering, Salem harbor, Massachusetts, - - - - - -	50	50	250
5	Fort Winthrop, Boston harbor, " repairs of - - - - -	50	10	250
6	Fort at Nangus head, Salem harbor, " - - - - - -	38	25	180
7	Fort Sewall, Marblehead harbor, " - - - - - -	55	50	280
8	Fort and outworks on Nantasket head, Boston harbor, Massachusetts, - - -	297	100	1,550
9	Fort at Jack's point, Marblehead harbor, " - - -	60	25	280
10	Redoubt on Hog island, Boston harbor, " - - -	21	25	150
11	Fort on Rose island, Narragansett roads, Rhode Island, - - -	96	25	580
12	Works on Conanicut island, Narragansett roads, " - - -	386	100	1,800
13	Fort Griswold, New London harbor, Connecticut, - - -	106	50	830
14	Fort Trumbull, New London harbor, " - - -	62	50	460
15	Fort Hall, New Haven harbor, " - - -	30	10	220
16	Fort Wooster, New Haven harbor, " - - -	16	10	155
17	Fort on Wilkins's point, New York harbor, New York, - - -	184	50	1,336
18	Fort Tompkins and dependencies, " - - -	114	50	970
19	Fort on Middle Ground shoal, New York harbor, " - - -	342	100	1,760
20	Fort on East Bank shoal, " " - - -	332	100	1,760
21	Fort opposite Fort Delaware, on right bank, Delaware, - - -	112	50	760
22	Fort on Elk river, to cover the debouche of the Chesapeake and Delaware canal and rail-road, Maryland, - - -	112	50	760
23	Fort on Soller's point flats, below Baltimore, " - - -	159	100	835
24	Fort on Point Patience, Patuxent river, " - - -	80	50	400

STATEMENT No. 2—Continued.

No.	Designation.		No. of guns.	Garrison.	
				Peace.	War.
25	Fort, Hawkins's point, below Baltimore,	Maryland,	121	100	845
26	Fort on Thomas's point, Patuxent river,	"	70	25	350
27	Fort on Bald-head island, Cape Fear river,	North Carolina,	90	50	450
28	Redoubt on Federal point, Cape Fear river,	"	43	25	200
29	Fort on Dauphin island, Mobile bay,	Alabama,	128	100	900
30	Tower at Pass au Heron, Mobile bay,	"	12	10	60
31	Fort St. Philip, Mississippi river,	Louisiana,	60	50	400
			3,506	1,565	19,831

No. 3.

A statement showing the prominent points along the sea frontier which will require protection, and for which no plans or projets have yet been made by the Board of Engineers.

No.	Designation.		No. of guns.	Garrison.	
				Peace.	War.
1	Fort at the mouth of Kennebeck,	Maine	150	50	500
2	Works at Eastport, mouth of St. Croix,	do.	50	25	250
3	Works at Machias harbor,	do.	50	25	250
4	Works at Mount Desert island,	do.	200	50	1,000
5	Works at Castine,	do.	25	10	125
6	Works at St. George's bay,				
7	Works at Broad bay,				
8	Works at Damariscotta bay,	do.	200	100	1,000
9	Works at Sheepscot bay,				
10	Works on Hog Island channel, Portland harbor,	do.			
11	Works at the mouth of Saco,				
12	Works at the mouth of the Kennebunk,	do.	30	25	100
13	Works at York,				
14	Works in Portsmouth harbor,	New Hampshire	300	150	1,500
15	Works at Provincetown,	Massachusetts	300	50	1,500
16	Works at New Bedford,	do.	150	50	750
17	Works at Newburyport,	do.	50	25	250
18	Works at Beverly,	do.	25	10	125
19	Reducing depth of water in Broad Sound passage,	do.			
20	Reducing altitude of Gallop's island,	do.			
21	Works at Nantucket harbor,				
22	Works at Edgartown harbor,				
23	Works at Falmouth harbor,	do.	125	50	625
24	Works at Holmes's Hole,				
25	Works at Tarpaulin cove,				

No. 3—Continued.

No.	Designation.	No. of guns.	Garrison.	
			Peace.	War.
26	Fort at Gloucester, Massachusetts	100	50	500
27	Fort at Gurnet point, Plymouth, do.	50	25	250
28	Repairs and modifications of old Fort Wolcott, Newport harbor, Rhode Island	45	50	250
29	Repairs and modifications of old Fort Greene, do.	8	-	50
30	Closing west passage of Narragansett roads, do.			
31	Fort at Stonington harbor, Connecticut	75	50	375
32	Works at the mouth of Connecticut river, do.	50	25	250
33	Works for the defence of several harbors and towns between New Haven and New York, on both sides of the sound, Connecticut	100	50	500
34	Works at Gardiner's bay, New York	150	50	750
35	Works at Sag Harbor, do.	50	25	250
36	Fort Wood, repairs of, New York harbor, do.	45	25	225
37	Fort Gibson, repairs of, do. do.	14	25	100
38	Works to cover Delaware breakwater harbor, Delaware	225	100	1,125
39	Fort on Cedar point, Potomac river, Maryland	110	50	550
40	Works on St. Mary's river do.	110	50	550
41	Works at Annapolis harbor, do.	100	50	500
42	Works in Port Royal roads, South Carolina	110	50	550
43	Works at Georgetown harbor, do.	100	50	500
44	Works at the mouth of the Santee, at Bull's bay, and at other inlets between Georgetown and Charleston, South Carolina	50	25	250
45	Works at Stono inlet, South Carolina	25	10	125
46	Works at North Edisto inlet, do.	25	10	125
47	Works at South Edisto inlet, do.	25	10	125
48	Works at St. Helena sound, do.	75	50	375
49	Fort on Tybee island, Georgia	75	25	300
50	Fort Jackson, Savannah river, repairs on, do.	30	25	200
51	Works to command entrance to Cumberland sound, mouth of St. Mary's river, Georgia	110	50	550

52	Works at Warsaw sound,	Georgia	-	-	-	-	-	-	-	-	100	50	500
53	Works at Ossabaw sound,	do.	-	-	-	-	-	-	-	-	100	50	500
54	Works at St. Catharine's sound,	do.	-	-	-	-	-	-	-	-	100	50	500
55	Works at Sapelo sound,	do.	-	-	-	-	-	-	-	-	100	50	500
56	Works at Doby inlet,	do.	-	-	-	-	-	-	-	-	100	50	500
57	Works at Altamaha sound,	do.	-	-	-	-	-	-	-	-	100	50	500
58	Works at St. Simon's sound,	do.	-	-	-	-	-	-	-	-	100	50	500
59	Works at St. Andrew's sound,	do.	-	-	-	-	-	-	-	-	100	50	500
60	Works to protect the navy yard, Pensacola, from lateral attack through the bays,	Florida	-	-	-	-	-	-	-	-	50	50	1,000
61	Fort at Barancas, Pensacola,	Florida	-	-	-	-	-	-	-	-	50	50	250
62	Works at St. Augustine,	do.	-	-	-	-	-	-	-	-	20	25	100
63	Works at Key West and Tortugas,	do.	-	-	-	-	-	-	-	-	500	500	2,500
64	Works at Charlotte harbor,												
65	Works at Espiritu Santo bay,												
66	Works at Appalachicola,												
67	Works at Apalache bay,	do.	-	-	-	-	-	-	-	-	250	250	1,250
68	Works at St. Joseph's bay,												
69	Works at St. Rosa bay,												
70	Works at Perdido bay,	Alabama	-	-	-	-	-	-	-	-	100	50	500
											5,282	2,875	26,900

No. 4.

List of military posts on the inland frontier of the United States, with the garrisons deemed necessary for them in time of peace, and to preserve peace.

No.	Names of posts.	Where situated.	Garrisons deemed necessary.
1	Hancock barracks	At Holton, on the Northeastern boundary of the United States	300 men.
2	Madison barracks	At Sackett's Harbor, New-York	100 "
3	Fort Niagara	On the Niagara river	100 "
4	Fort Gratiot	Outlet of Lake Huron	100 "
5	Fort Mackinack	Island of Mackinack	100 "
6	Fort Brady	Sault Ste. Marie	200 "
7	Fort Howard	Green bay	200 "
8	Fort Winnebago	Portage of Fox and Wisconsin	300 "
9	Fort Crawford	Prairie du Chien	500 "
10	Fort Snelling	Falls of St. Anthony	300 "
11	Fort Leavenworth	Missouri river	1,000 "
12	Fort Gibson	Arkansas river	1,500 "
13	Fort Towson	Red river	800 "
14	Fort Jesup	Louisiana	300 "
15	Baton Rouge barracks	Baton Rouge, Louisiana	300 "
16	Jefferson barracks	Missouri	1,500 "
		Total,	7,600 men.

Note.—The above is the estimate of force for the posts already in existence; 1,500 men might be added for those on an inner line, on the Western frontier, which, it is believed, will become necessary for the protection of the border settlements.

The force assigned to Jefferson barracks is intended as a corps of reserve for the Upper Mississippi, the Missouri, and the Arkansas. From its central position and proximity to the mouths of those rivers, reinforcements may be thrown out

from that place to almost every point upon the frontier, with great ease and rapidity. A reserve there is, in fact, an available force for the whole line of frontier from the Upper Mississippi to the Arkansas. It should, indeed, be even stronger than is here estimated. The whole force assigned to the Western frontier, from Fort Snelling, on the right, to Fort Towson, on the left, a line of more than one thousand miles in extent, is 5,100 men, including the reserve at Jefferson barracks. This may appear large; but whoever shall undertake the defence of that frontier, under existing circumstances, with less, will be likely to find himself sadly embarrassed. It is at last but a force to *prevent* war, not to carry it on effectually. If ever a general war should commence along that extended line, conducted with the skill that many of the tribes are known to possess, it will require an army of 30,000 men, and all our energy, to prevent them from making serious inroads upon our settlements.

WASHINGTON, *November* 3, 1837.

No. 5.

REPORT OF MEDICAL BOARD ON MARINE HOSPITALS.

WASHINGTON, *November* 17, 1837.

SIR: Agreeably to "General Orders No. 28," the board of medical officers appointed in pursuance of an act of the last session of Congress, (approved 3d March, 1837,) to select and purchase sites for marine hospitals on the Mississippi and Ohio rivers and Lake Erie, have the honor respectfully to report:

The board assembled, in obedience to orders, at Baton Rouge, Louisiana, and organized for business on the 18th day of June last. Their line of operations extended, on the Mississippi, from Baton Rouge, Louisiana, to Dubuque, Wisconsin Territory; and on the Ohio, from its mouth to Steubenville. From thence, passing over to Lake Erie, an examination was made of the prominent places on that shore.

The act of Congress authorized the selection and purchase "for the use and benefit of sick seamen and boatmen, and all other navigators of the Western rivers and lakes, suitable sites for marine hospitals," amounting in all to seven, (exclusive of one in New Orleans;) of which three were to be established on the Mississippi, three on the Ohio, and one on Lake Erie; for the purchase of which fifteen thousand dollars were appropriated.

Although the board were aware of the importance to the Western people of the proposed institutions, and of the great amount of suffering which is yearly experienced from disease and numerous casualties, the information which they derived in the prosecution of their duties impressed them still more deeply with the importance of the subject, and of the benefits which would accrue to a numerous class of industrious citizens, by the establishment of a chain of well-regulated hospitals. The hardy and industrious farmer who, with the fruits of his toil, embarks on the flat-boat, and seeks a market at the great emporium of the South-west, exposed to the heat of the mid-day sun, and the more baneful vapors of night; and the steam-boatman who, in addition to those causes of disease, is subjected to frequent and dangerous casualties, instead of being thrown upon the charity of strangers, would then have an asylum where skill and attention would unite to restore him to renovated health, and enable him to return with gladness to his expecting friends.

The steady and rapidly increasing commerce of the West is perhaps without parallel in the history of the world. Twenty-six years ago, the productions of the country washed by the Ohio and Mississippi and their tributaries were exclusively carried in flat and keel-boats to find a market in New Orleans. Men employed on these boats were obliged either to return to their homes on foot, traversing a wilderness five hundred miles in extent, or take passage in some vessel bound for one of the Northern ports. Sixteen weeks was then the ordinary time required for a keel-boat to ascend from New Orleans to Pittsburg. But with the introduction of steam commenced a new era, as important in its effects as it was magical in its influences. The first steamboat which attracted

the gaze of the amazed Indians, and the no less astonished settler, descended the Ohio and Mississippi in December, 1811. Until then, no sound save the report of the hunter or warrior's rifle, or the woodman's axe, had disturbed the solemn stillness of the primeval forest. The sovereignty of nature seemed complete. But the art of man was at work, and a revolution at hand. Steamboats increased; forests were felled; cities, and towns, and farms, usurped their place; and the tenants of the woods fled before an enterprising, industrious, and thriving population.

According to the most authentic official information which the board have been able to procure, the number of steamboats in commission on the Ohio and Mississippi, and their tributaries, from 1834 to September 30, 1837, inclusive, was as follows:

In 1834,	262	steamboats.
In 1835,	399	do.
In 1836,	502	do.
In 1837, (Sept. 30,)	638	do.

The number of flat and keel-boats cannot be ascertained with perfect accuracy. Dr. Drake, who has bestowed considerable attention to the subject, states that, "several years ago, it was ascertained that 10,000 (flat-boats) arrived at New Orleans in a single year." At Louisville, the average number of flat and keel-boats that passed the canal from 31st December, 1831, to 31st December, 1836, was 400 per annum; and the estimated number that passed over the falls, 1,600; making 2,000 per annum. Concurring in the opinion of Dr. Drake, that the increase of steamboats has somewhat diminished the number of flat and keel-boats, the number of these last descending the Ohio and Mississippi may be set down at 6,000.

On Lake Erie, agreeably to official information obtained from the collector of the port of Cleaveland, the number of ships, brigs, schooners, and sloops navigating the lake, is 300; number of steamboats, 42. Boats on the Ohio canal, 256.

RECAPITULATION.

Ohio and Mississippi rivers.

Number of steamboats, 638; average number of officers and hands, 25,	15,950
Number of flat and keel-boats, &c. 6,000; average number of officers and hands, 5,	30,000
Total,	45,950

Lake Erie.

Number of ships, brigs, schooners, and sloops, 300; verage number of officers and hands, 7,	2,100	
Namber of steamboats 42; average number of officers and hands, 30,	1,260	
Number of canal boats, 256; average number of officers and hands, 7,	1,792	
		5,152
Grand total,		51,102

In selecting the sites for the proposed hospitals, the board kept in view the following rules for their guidance:

1st. A preference for those points that would benefit the greatest number of boatmen and other navigators.

2d. Healthiness of position.

3d. Appropriate distances between the several sites—the more sickly the region, the shorter the distances; and *vice versa*.

4th. The resources of the country around for supplying the sick.

In regard to the quantity of land necessary for the buildings and other purposes, eight acres was deemed the *minimum* amount which ought to be purchased; while a greater quantity would be preferable where the position of the ground and other circumstances would permit its being secured. Besides having a sufficiency of ground for the buildings, it was considered indispensably necessary, for the comfort of the sick and convalescent, to secure enough for gardens, walks, &c. Another consideration of no less importance and weight with the board was, to make their selections as convenient to the general landing-places as circumstances and a proper regard for healthiness of position would permit; so as to lessen as much as possible the fatigue and exposure incident to conveying the sick to the hospitals. Nor was the beneficial effect overlooked, of a view of the water, and the impressions and associations it would naturally awaken in the minds of men whose occupations were so intimately connected with it.

Sites thus situated necessarily cost more than if they had been selected at a greater distance from the public landings; but when the national character of the institutions is taken into consideration, and that the comfort and, oftentimes, the lives of the sick would require that they should be convenient, not only to the great thoroughfares, but particularly to the usual landings, the board confidently believe that, in carrying out their own views, they only anticipated those of the Government. Moreover, to erect costly buildings, which would doubtless endure for ages, on sites remote and inconvenient, merely to save a few thousand dollars, would, in effect, be defeating the very object of their creation.

It became early manifest, however, that the amount of the appropriation was utterly insufficient for purchasing the required number of sites, besides defraying the expenses of the commission, including legal services, charges for surveying, &c. When it is considered that, to be useful, it would be necessary for most of the hospitals to be built in the vicinity of the principal commercial cities and towns, where ground is measured and sold by the foot, every one at all acquainted with the value of property in the neighborhood of such places will fully concur in the impossibility of purchasing seven hospital sites, and of defraying the necessary expenses with the appropriation for that purpose.

Under such circumstances, one of two courses was left for the adoption of the board: 1st, to purchase only a part of the number of sites required by the act of Congress; or, 2d, to purchase the whole number; the contracts to be subject to the approval of the Secretary of War. After mature deliberation, it was determined to adopt the latter, not doubting that, upon proper representations being made, Congress would not hesitate to make up the deficiency by an additional appropriation.

The foregoing preliminaries having been adopted, the board commenced their examinations at Baton Rouge, Louisiana, and prosecuted the same as heretofore stated. Their reconnoissance, conducted with all the care which the importance of the trust demanded, resulted in their selecting and purchasing sites

For the Mississippi river—	
At Natchez, 10 acres, amounting to - - - -	$7,000
At Napoleon, mouth of the Arkansas, 10 acres and a fraction,	1,000
At St. Louis, 18 acres and a fraction, - - -	7,468
On the Ohio—	
At Paducah, 10 acres, - - - - -	1,000
At Louisville, 8 acres and a fraction, - - - -	6,000
At Wheeling, 11 acres, - - - - -	5,500
On Lake Erie—	
At Cleaveland, 8 acres and a fraction, - - -	12,000
	$39,968

To this amount are to be added other incidental expenses alluded to in another part of this report, to cover all which will require an additional appropriation of dollars.

As the sites were purchased for considerably less than the same ground could have been bought for private purposes, it is respectfully recommended that the early attention of Congress be called to the subject, in order that, if the selections should be approved by the proper authority, the land may be paid for and secured.

According to the best information as to the number of sick likely to require aid at the places above enumerated, the board respectfully recommend that the hospitals be divided into two classes: the largest to be built at Natchez, St. Louis, Louisville, and Cleaveland, and to be capable of accommodating one hundred patients each; the smallest, at the mouth of the Arkansas, Paducah, and Wheeling, to accommodate fifty patients each. The buildings should be planned with a view to their future enlargement, without injury to symmetry, so as to meet any future augmentation of patients. It will be important, also, that they should be constructed to suit the latitude in which they are respectively situated: those on the Mississippi with a special view to coolness and free circulation of air; the others, particularly the one at Cleaveland, besides having these important objects attended to, should also be capable of excluding cold, and of counteracting the vicissitudes of the weather.

In conclusion, the board ask your indulgence for presenting, briefly, a few of the prominent reasons which influenced them in giving a preference to the points they did. Natchez was the first place above New Orleans which was selected, because of its commercial importance, the numerous boatmen trading to that place, its appropriate distance (about 300 miles) from New Orleans, and the large number who are annually taken sick at that place.

Napoleon (mouth of the Arkansas) was next chosen, because of its convenient distance from Natchez, (300 miles,) its advantageous geographical position, being at the mouth of the largest tributary of the

Lower Mississippi, and only ten miles below White river; the trade of both which is rapidly increasing. A hospital site at this point, therefore, combines many advantages which could not have been secured if it had been selected higher up the river.

St. Louis, as the site for the third and last hospital on the Mississippi, presents such superior and evident claims over every other town on the upper portion of the river, that it is hardly deemed necessary to enumerate them.

In selecting the sites on the Ohio, Louisville, from its position at the falls, being a place of deposite and transfer, is, in a great degree, the central point of trade on that river. These facts being considered indisputable, there could be little hesitation as to the propriety of selecting that place as the central position on the Ohio for the establishment of a hospital.

It was equally manifest that the two remaining sites should be selected above and below this fixed point; and that the latter should be as near to the mouth of the river as circumstances would permit.

In ascending, Paducah is the first point deserving of particular notice after leaving the malaria region. It is forty-four miles distant from the junction of the Ohio with the Mississippi, and upwards of three hundred from Louisville. It is, moreover, for several months in the year, at the head of navigation for boats of the largest class, owing to the difficulty and, oftentimes, impossibility of passing the Cumberland bar, near the mouth of the Cumberland river. Another most important consideration is its geographical position, being situated at the mouth of the Tennessee river, and thirteen miles below the mouth of the Cumberland, through which the productions of a part of Kentucky, and all of Tennessee and North Alabama, must pass to find a market, giving employment, consequently, to a very large number of boatmen. For all these reasons, involving the important consideration that a hospital here would benefit a larger number of men than at any other point below Louisville, there could be no hesitation in selecting it as the site of the lower hospital. Any point materially higher up the river would be approaching too near to Louisville, besides that it would be depriving the boatmen of the Tennessee and Cumberland, as well as a part of the Ohio, of all the advantages to be derived from the hospitals on this river. The same objection cannot apply to the site selected, for all the boatmen above must pass by Paducah, both in going to and returning from New Orleans and other ports on the Mississippi.

Wheeling was selected as the third and last site on the Ohio river. In so doing, the board were not unmindful of the importance of Cincinnati, or of the claims of its citizens. Its proximity to Louisville, and the brief time in which trips are performed between the two cities, (being from twelve to fifteen hours in descending, and from twenty to twenty-four hours in ascending,) would, without great inconvenience, enable the sick to avail themselves of the advantages of the hospital at the former place. For this reason, and believing that the benefits should be diffused as much as possible, a site higher up was preferable. Wheeling was, therefore, selected because of its greater and more desirable distance from the central site; and, likewise, from its situation at the head of navigation

for boats of the ordinary class for a considerable part of the year, which always includes the sickly season.

On Lake Erie, to which the attention of the board was confined by the act of Congress, a site was selected at Cleaveland, as it is the terminating point of the Ohio canal, and a central position in its relation to the trade of the lakes combining to render it a place of great and growing importance.

All which is respectfully submitted.

B. F. HARNEY, *Surgeon*,
H. L. HEISKELL, *Ass't Surgeon*,
J. M. CUYLER, *Ass't Surgeon*,
} Medical Board.

Hon. JOEL R. POINSETT, *Secretary of War*.

No. 6.

PLANS AND ESTIMATES FOR MARINE HOSPITALS.

CITY OF WASHINGTON, *November* 30, 1837.

SIR: Agreeably to your instructions, I have prepared two designs for the marine hospitals proposed to be erected on the Western waters, embracing in their accommodations the two different numbers of patients to be provided for, viz: one building of a size to accommodate one hundred patients, and another building to accommodate fifty patients. The plans are so arranged as to admit of extension at any future time, to meet increased accommodations, without deranging or disfiguring the symmetry of the main building.

In arranging these plans, reference has been had to several essential points connected with the hospitals: ample space, free ventillation, separation of patients by classes into distinct wards, and extensive galleries on the level of each floor, as well for shelter as exercise. Besides these, attention has been paid to suitable economy in the construction of the buildings, consistent with a proper regard to architectural decency. A little variation of the two designs is presented, in the style of façade, so as to distinguish them. One plan also represents but two floors, while the other gives three, including the basement story. The nature of the ground and other considerations will determine which would be most proper to adopt.

The openings in the wards are so disposed, that all the beds receive the benefit of a free ventilation, without subjecting the patients to injury by the air blowing directly upon them. Not more than eight beds are placed in each ward, which allows five feet for each bed and space between, in their width, and a passage-way between the foot of the beds of near eight feet. All these passages lead, one way, into spacious corridors, and the other into wide piazzas; besides this, every ward is capable of being ventilated over-head. Provision is made also for diffusing a current of warm air in winter throughout the wards, and in summer a current of cool air, so that every disagreeable vapor may be dissipated.

The material of which these hospitals will be built will vary according to location; where stone is on the spot, this may be preferred to brick. As economy is to be observed with durability, we will, in forming an estimate, have reference to brick as the main material for the walls. The price of labor and materials will vary also in the different places where these buildings will be erected. At Natchez, at Napoleon, (mouth of Arkansas river,) and St. Louis, a larger amount would have to be appropriated for each building than at Paducah, Louisville, Wheeling, and Cleaveland. Assuming an aggregate sum for the whole, I would estimate the hospital to accommodate 100 patients upon the plan proposed at $50,000; and the hospital to accommodate 50 patients at $25,000.

There being four for 100 patients each, these will amount to	$200,000
And three for 50 patients each will amount to - -	75,000
Total for the seven -	$275,000

Annexed to the book of drawings will be found a description of each design. When contracts are required to be made, more detailed drawings and descriptions will be furnished. As they are not necessary at present, they are omitted.

I would respectfully suggest, in the construction of these buildings, that the first or basement story should be at least in part made fire-proof, and every floor counter-ceiled and made as safe as possible from the effects of fire.

It is an awful idea to think of a fire taking place in a house like this, filled with helpless sick, where no check is afforded to stay its ravages: special care, therefore, should be used to make the buildings as safe as possible against fire. Heating the rooms with warm air, by its superseding the necessity of fires, will afford much security against accidents of this nature; and if the rooms where large fires are necessarily kept are made fire-proof, there would be little to apprehend from this cause.

All which is respectfully submitted.

ROBERT MILLS, *Architect.*

Hon. J. R. POINSETT,
Secretary of War.

Description of plan No. 1, for a Marine Hospital, proposed to accommodate one hundred patients.

The plan presents the complete parallelogram form, 150 feet by 80 feet, including the piazzas, and the elevation of three floors, including the basement or ground story. The first floor provides for the domestic offices of the establishment. The rooms, fifteen in number, and of various sizes, are laid off on each side of a wide corridor. Outside of these rooms, on each front, are the arcaded passages or covered walks, one hundred feet long, terminated by the wing buildings; two of the entrances are under these arcades, and two at each end of the corridors. In some situations, the rooms in this story designated for the kitchen, wash-house, refectory, &c., may be appropriated to these uses; in other situations, these may be provided for in out-buildings; in which case, the rooms may be used for other purposes. The second floor is divided into twelve rooms, besides the vestibules and staircase, disposed on each side of a corridor fifteen feet wide; fronting these rooms, outside, are the piazzas, one hundred feet long and eleven feet wide. The south rooms on this floor are arranged as wards—four 19 by 20 feet, containing 6 to 8 beds each; and four 30 by 22 feet, embracing 10 to 12 beds each. The north rooms are appropriated to the accommodation of the officers and offices of the establishment, viz: the superintendent's and refectory rooms in the wings, 22 by 30 feet; the physician's, apothecary's, matron's, and parlor rooms between the wings, all opening into the piazza in front. From without you ascend by steps into this piazza, which leads into a hall 19 by 20 feet, opening into the corridor fifteen feet wide; and in front is the great staircase leading to the rooms above. Ascending these stairs, you land in a spacious vestibule, opening outwards into the piazzas, ranging both fronts between the wings; on each side of this

vestibule large Venetian door-ways open into wide corridors communicating with the different wards, as well as with the nurses' and other rooms. Two large wards in the wings, 22 by 30 feet, are capable of containing comfortably 10 or 12 beds each; eight other rooms, 19 by 20 feet, 6 to 8 beds each; and two larger rooms (which may each be divided into two other rooms) for the nurses and physicians in attendance.

By a reference to the plans, the above description may be better understood, and it will be seen that every attention has been paid to comfort and convenience, economy of space and of construction. Spacious promenades, both within and without, are provided; ample passages between the beds in the wards; free ventilation of the rooms in summer, and a supply of warm fresh air in winter, by means of air-furnaces placed in the basement story. It will be seen, also, that the beds are so disposed, that the patients will suffer no inconvenience from a draught of air passing through the rooms, when this is required. Should the emergency require it, the spaces allotted for corridors, &c., may be allotted to beds, and thus a greater number of sick may be accommodated.

The main stories are each thirteen feet high in the clear, and the basement story ten feet. The floors are proposed to be all counter-ceiled, not only to prevent the passage of sound, but as a safeguard from fire, and avoiding any under-currents through the floors.

The façades, front and rear, present a double piazza or colonnade, in the Greek style of architecture, elevated upon an arcade, and flanked by wings, rising above the centre building and receiving the roof.

The attic story of the wings will provide for additional wards, if required.

Enclosures are provided for every story of the piazzas, and the whole surmounted by an iron railing. A reference to the drawing will give a better idea of these façades than can be conveyed by words.

With respect to the materials for the walls, this will depend upon the facility of procuring brick or stone, or both; but, in any case, one or other, or both, of these materials is to be used.

ROBERT MILLS, *Architect.*

Description of plan No. 2, for a Marine Hospital, proposed to accommodate fifty patients.

This plan presents nearly a geometrical form, flanked at each angle by a square tower which projects from the main building in front sufficiently to receive the piazzas forming each façade. The elevation provides for two floors, raised upon a low basement.

A flight of six steps in front lands in a piazza 40 feet long, flanked by two small rooms 11½ feet square for the clerk's and superintendent's offices. Opposite the steps a door-way leads into a vestibule 18 by 20 feet, which opens into a corridor 12 feet wide, that communicates with a suite of rooms on one side, three in number, 18 by 20 feet, containing 6 or 8 beds each, and two rooms on the other for the matron and warden.

The ward rooms open back into a piazza like that in front, at each

end of which are two small rooms, 11½ feet square, for the nurse and apothecary.

At each end of the corridor roomy stair-ways lead to the second floor, which is disposed into five wards, 18 by 20 feet, containing 6 to 8 beds; a physician's room, 18 by 20 feet; and four rooms in the tower-wings, 11½ feet square, for the nurses and apothecary.

All these rooms open outwards into spacious piazzas, and inwards into roomy corridors. The whole of this floor presents the appearance of one great ward, yet divided so as to render at pleasure each part private. The beds are disposed in the same way as represented in plan No. 1. and the patients will possess the same advantages in point of comfort, The drawings annexed will explain more particularly the details of the plan, and also show in what manner this building may be enlarged to meet future requisitions to provide accommodation for other patients.

The façade of this building, 68 feet in extent, is in the plain Gothic style, and presents a double piazza of two stories, supported by clustered columns, elevated upon a low basement, and flanked by two wings as towers. The piazzas as well as towers are surmounted with battlement enclosures.

By reference to the drawing, the architectural effect of this arrangement of façade may be judged of. As respects the material to be used in constructing the walls of this building, economy will point out brick as the most probable, except stone is plenty and easily quarried in its neighborhood.

Whatever materials are used in the building, they are intended to be of the best quality, and the work done in the best and most workmanlike manner.

ROBERT MILLS, *Architect.*

No. 7.

REPORT OF THE MAJOR GENERAL OF THE ARMY.

HEADQUARTERS OF THE ARMY,
Washington, November —, 1837.

SIR: In accordance with your instructions dated on the 7th of September last, I have the honor herewith to submit the following statements and returns:

1st. A statement showing the organization of the army, marked A.

2d. A general return of the army, marked B.

3d. Distribution of the troops in the Eastern division, marked C.

4th. Distribution of the troops in the Western division, marked D.

5th. A return showing the number of troops under the command of Major General Jesup, serving in Florida against the Seminole Indians, marked Z.

6th. A statement showing the number of recruits enlisted in the army from the 1st January, 1837, marked E.

My last report shows Governor Call, of Florida, the commander of our forces against the Seminole Indians, to have fallen back upon Fort Drane for a supply of provisions and other necessaries. On the 10th of November, 1836, Governor Call, with some regulars, about 750 Creek Indians, and 1,200 mounted Tennesseans, again left Fort Drane, and on the 13th arrived at the Withlacoochee, which was crossed, without opposition, by a part of the army. On the 17th, a large encampment of the enemy was discovered, and General Armstrong, with one regiment of the Tennessee volunteers, was ordered to attack them in a swamp, to which they had retreated. This was soon done in a spirited manner, and the Indians driven from their strongholds and pursued. In the action, which lasted 30 minutes, the enemy are reported to have lost 20, left dead on the field; our own loss being 11 killed and wounded.

On the 18th another attack was made by 550 Tennesseans on a hammock, which was resisted, it is supposed by Governor Call, by about 600 or 700 Indians. The enemy were driven as before, after an engagement of half an hour, till out of sight. Their loss was considerable: 25 were reported found dead on the field; but as their wounded were carried off, the total loss could not be estimated. Our loss was 15 killed and wounded. On the 20th a junction was formed by the force of Governor Call with the regulars under Lieutenant Colonel Pierce of the army. On the 21st of November, the whole command moved towards a swamp in which the enemy awaited its approach. A charge was made forthwith, and the enemy driven at all points. By means of a trail, however, after a considerable time and the utmost difficulty, the Indians were discovered by Captain Brown, of the 4th regiment of United States artillery, commanding the Creek regiment, who attacked them. In the meanwhile the Tennessee and Florida militia and regulars, under brevet Lieutenant Colonel Pierce, of the 1st regiment United States artillery, arrived, and joined in the contest, which resulted in the repulse of the enemy, whose loss in this affair is supposed by Governor Call to have been not less than fifty; our own being 21 killed and wounded. The

officers and men engaged throughout are spoken of in the highest terms; and had they not been prevented from holding the position gained by want of provisions, much more might have been effected.

Immediately after the War Department was apprized of the failure of Governor Call to cross the Withlacoochee, when first attempted in October, 1836, he was directed to turn over the command of the Florida army to Major General Jesup, who, about the 15th of October, had entered the Territory with a part of the forces employed in subduing the Creek Indians.

General Jesup was detained, for want of transportation, at Tampa, till the 27th of November, on which day he moved towards the scene of Governor Call's operations on the Withlacoochee. Before he proceeded far, he found that Governor Call had been in and scoured that part of the country, and retired with his force on Volusia. General Jesup then ordered a countermarch, and with 400 men joined Governor Call at Volusia on the 4th of December. On the 8th of December he relieved Governor Call, and assumed the command, agreeably to the order of the War Department.

From Fort Dade, on the Withlacoochee, General Jesup reports his command, consisting of the Tennessee brigade, 300 regular troops, the Alabama battalion, about 320 strong, and 500 Creek warriors, to have examined the Wahoo swamp without meeting with the enemy.

On the 23d of December General Jesup writes from Tampa that he left brevet Brigadier General Armistead, of the army, on the Withlacoochee, to make further examination of the country between Fort Dade and Fort King.

On the 1st of January, 1837, General Jesup writes from Tampa that much sickness prevails among the troops, and that the Indians in our service are completely broken down.

On the 17th of January, General Jesup reports that the swamps of the Withlacoochee were thoroughly examined, but no Indians found. On the reports received from different quarters, various detachments of troops were sent in different directions without decisive results; the enemy generally having dispersed. Sometimes a few stragglers, women and negroes, were taken, from whom information as to the position of the enemy was received.

On the 22d of January, the main body of the army, under the immediate command of General Jesup, marched to the head-waters of the Ocklawaha, where it was supposed were the strongholds of the enemy. Cooper and his band of Indians were surprised; himself and three warriors killed, and seventeen Indian women and negroes taken prisoners. Here it was ascertained that the mass of Indians had gone in a southeasterly direction, and pursuit was accordingly made. The enemy was found on the Hatcheelustee and attacked; his baggage and horses were soon captured, and himself driven into a thick swamp. On the day after the skirmish (28th) a prisoner was sent to his people with an offer of peace; on the night of the 29th he returned, and brought peaceful messages from Alligator and Abraham, two hostile chiefs. On the 3d of February, others came in and entered into arrangements to cause hostilities to be suspended until a conference could be had, for which the 18th of February, 1837, was fixed.

On the 8th of February, a band of the enemy, under Philip, unacquainted, it is supposed, with the temporary suspension of hostilities, attacked the post on Lake Monroe, garrisoned by detachments of the 2d United States dragoons and artillery, under brevet Lieutenant Colonel Fanning, of the 4th regiment of artillery. In the defence of this post, Captain Mellon, of the 2d artillery, was killed, and Passed-midshipman J. T. McLaughlin, of the navy, a volunteer, wounded; after which, the enemy were driven off without much injury to our troops. On the 17th of February, General Jesup writes and says, on account of the attack of the Indians on the fort commanded by Lieutenant Colonel Fanning, he doubts the sincerity of the Indians as to their coming in on the 18th, according to agreement. On the 22d of February the general writes, that some of the Indian chiefs had come in, but the rest seemed very loath to follow. In March, a convention, or agreement, was made between the Seminole chiefs and General Jesup. On the 26th of March, General Jesup, on account of the arrival at Tampa Bay of great numbers of the enemy, and some important characters belonging to them, expresses a belief that the war was at an end, and commenced to discharge his volunteers. On the 8th of May, he wrote that the Indians continued to come in, and that they would probably be emigrated in the course of the winter. On the 5th of June, the general informed the Department that the Indians who had surrendered and were in camp near Tampa for the purpose of emigration, were surrounded by a party of their own warriors and carried off, thus causing the unsuccessful termination of the campaign.

About this time active operations ceased; the climate during the summer not permitting of them, and the army was so distributed as to render the frontiers as safe as possible. Much sickness prevailed in the interior, the several posts of which were in consequence abandoned. Hospitals were established, and many of the invalids, on the surgeon's recommendation, were removed to Fort Monroe, in Virginia, and Fort Hamilton, in the harbor of New York.

On the 31st of August, General Jesup reports that the Creek regiment had been discharged.

Although the hostile Indians acted on the defensive, our mounted men were kept moving from one post to another, making examinations and gaining information for future operations.

Brigadier General Hernandez, of the Florida militia, having learned from some negroes who had escaped from the Indians the position of some Indians under the chief Philip, on the 7th of September, organized a small force of dragoons, artillery, and militia, and went in search of them. They soon came to the camp and surprised them. They resisted for a short time, but were all either slain or taken prisoners. Some important chiefs were among the number. The officers and men are reported to have behaved very gallantly. Lieutenant McNeil of the 2d dragoons, a young and gallant officer, was killed in this affair. From time to time, several parties of Indians and negroes have surrendered themselves or been taken prisoners; among others, Yose Ya Hola, (Powell,) who began the war, and many influential chiefs, who are now in confinement at St. Augustine.

On the 21st of October, General Jesup reports that since he took the

command, thirty of the enemy had been slain, and about five hundred captured.

The army in Florida, reduced by disease, and the discharge of those whose term of service had expired, has been recruited and augmented by detachments of the regular troops, drawn from various points, and by numerous volunteer forces.

In the month of January last, seven companies of the sixth regiment of infantry arrived at Tampa Bay from the Western frontier, and six companies of the second regiment of dragoons, one company of the second artillery, and one company of the third artillery, recruited at the North, sailed from New York and Norfolk, and arrived in the St. John's. In September last, the first regiment of infantry from the Upper Mississippi left Jefferson barracks, Missouri; and a battalion of the second infantry, from the lakes, left New York for Tampa Bay, and are now at their destination. In the same month, three companies of the second dragoons, under Colonel Twiggs, left Jefferson barracks, to march or cross the country for Florida, and, when last heard from, were at Garey's ferry, in that Territory.

In addition to the above-named organized force, 1,900 recruits for the regiments of the army serving in Florida have recently reached there from Norfolk and New York, and from the interior.

The aggregate force under the command of Major General Jesup in Florida, it will appear by the statement accompanying this report, amounts to 8,993 men, consisting of—

Regulars - - - - - -	4,637
Volunteers - - - - - -	4,078
Seamen - - - - - -	100
Indians - - - - - -	178
	8,993

By the last advices from General Jesup, active operations on his part have commenced, and every hope is entertained that, with the arrangements made by him, and the ample aid furnished by the War Department, the object for which the army is assembled in Florida will, by the close of the season, be fully and completely attained.

In consequence of information having been communicated to Colonel Many, commanding the troops at Fort Jesup, that an insurrection among the negroes was apprehended at Alexandria, Louisiana, that officer ordered thither two companies of his command, to afford the desired protection.

When the vast extent of the frontiers of the United States is compared with the amount of regular force allotted by law for their defence, it must strike every thinking man that the present military establishment is by no means adequate to afford what might be regarded a reasonable means for maintaining peace on the Indian borders, and protection to the seaboard, without taking into account the preservation of the great amount of public property which has been collected in our various arsenals and in our maritime fortresses. The number of the rank and file of the army, according to existing laws, is less than seven thousand;

and these men are organized into two regiments of dragoons, four regiments of artillery, and seven regiments of infantry, occupying, when at their proper stations, between fifty and sixty posts, extending along the whole frontier of the United States, inland and Atlantic. But at present most of these posts are in a defenceless state, in consequence of the Florida war requiring almost the whole military force: in fact, every post on the Atlantic, from Maine to the Sabine, is without a single company to garrison it, or to take charge of the public property. The Western frontier, especially that portion which covers the States of Louisiana, Arkansas, and Missouri, and the Territory of Wisconsin, separates from the white population numerous tribes of Indians. These tribes are the original inhabitants of the country, and emigrated Indians sent from among the States to lands allotted to them on that frontier. They are estimated to amount in the aggregate to more than 250,000, and can furnish 30,000 warriors. Such a population cannot be viewed otherwise than as dangerous neighbors, and should be kept in check by a proper disposition of military force.

The disasters and consequences of an Indian war are too well known to be here dwelt on. Disturbances continually occur which produce alarm and agitate the country, and sometimes lead to open hostilities. On such occasions, for the want of sufficient numbers of regular troops on the frontiers, the distant posts are obliged to be evacuated to furnish means of defence, and a militia force called out; and heavy expenditures, by the loss of property near the scenes of these troubles, are the consequence. But if the force permanently imbodied on that frontier were sufficient to overawe the Indians, or to subdue them in the commencement of hostilities, much expense would be saved, as well as a proper protection afforded to the frontier States, without the necessity of calling out the militia, which is always attended with heavy expenditure of money and loss of life by disease, and is highly detrimental to the concerns of individuals. An augmentation of the army, therefore, to a reasonable extent, is called for by a policy of humanity and economy.

I would, therefore, respectfully submit to your consideration the propriety of augmenting the numerical force of the army, so as to furnish an effective rank and file of 15,000 men, to be organized according to the accompanying table, marked No. 1. With such a force the frontiers might expect to enjoy tranquillity; and by the occasional concentration of the troops in sufficient force to practise the evolutions of the line, a great improvement in the discipline and efficiency of the army would naturally be the result; and if war should break out with any civilized Power, the army, thus augmented, would furnish a basis on which could be built a regular force adequate to meet the exigency.

The table marked No. 2 will exhibit the manner in which the proposed force would be distributed.

The regiments of artillery and infantry, since the late war with Great Britain, have been placed, as to rank and file, on the lowest possible establishment consistent with a regard to the preservation of military knowledge and discipline among them; but for operations in the face of an enemy, the rank and file, as experience has proved, were reduced too low for any efficient service—a company of artillery having, when full, only 49 rank and file, and a company of infantry 46. Taking into con-

sideration the shortness of the term of enlistment, which is now but three years, the nature of the service, and the diseases to which the troops are subjected by constant exposure, especially in insalubrious climates, without reckoning the casualties of war, it is not to be expected that any company will be able, one month after taking the field, to present under arms more than two-thirds of its original number. The army, operating for the most part in uninhabited parts of the country, or where the population is very sparse, is obliged to furnish from the line the drivers of trains, and the laborers on all occasions where labor for the service is required, such as opening roads, building bridges and causeways, and other fatiguing duties. It is recommended, in order to render the army efficient and capable of performing the duties required, that every company of artillery and infantry be augmented to 80 men, with authority to increase them to 100, should circumstances render it proper; so that there may always be in each regiment, for duty with arms, a respectable force.

The propriety of increasing the Engineer department, including the Topographical engineers, the Ordnance department, and the Quartermaster's department, has been frequently urged. The duties required of these several staff departments have been so extensive and multifarious that they have not been able to perform them without the assistance of a great number of officers from the line; and, consequently, it has diminished measurably the efficiency of the regiments from which these assisting officers have been withdrawn.

In consequence of these draughts upon the line, it frequently happens that several companies of a regiment are left without a single officer to command them, or take charge of the interests of the soldiers. I cannot, therefore, too strongly recommend that provision be made at once for a sufficient number of officers for the several branches of the staff, and that each branch be organized into a distinct corps, or department, complete in itself, and sufficient to meet every exigency which has reference to it. The chiefs of the several staff departments will, in their reports, indicate what is required to render their respective departments efficient.

The duties of the inspectors general, since my last report, have been various. Brigadier General Wool, until within a short time, has been in command of the forces assembled in the Cherokee country; but having been relieved from that duty by Colonel Lindsay, of the 2d artillery, he has been attached as chief of the staff to the Eastern division, under Major General Scott.

Colonel Croghan, since my last report, has completed the inspection of the troops on the Mississippi; he has been likewise engaged in mustering several corps of volunteers called into the service of the United States. He is now attached as chief of the staff to the Western division, under Major General Gaines. According to your instructions, General Gaines, with the assistance of Inspector General Croghan, and several topographical engineers, has been ordered to make, as early as practicable, a reconnoissance of the Western frontier, with a view of projecting a system of defence for its protection, in conformity with a resolution of the House of Representatives.

Major General Scott, in like manner, has been directed, with the assist-

ance of Brigadier General Wool, inspector general, and a topographical engineer, to make a reconnoissance of the Northern and Eastern frontiers, for the establishment of a system of defence for that portion of the country, in conformity with a resolution of the Senate.

The recruiting service has been more successful this year than usual, as will be seen by the statement marked E.

The term of enlistment, however, is found by experience to be too short—it being only for three years. The time consumed in recruiting the men, in instructing, and transporting them to their respective regiments, some of which are very distant, diminishes the period of actual service nearly one-third; unnecessary expense is thereby created, and the army is filled with raw and inexperienced soldiers. I therefore strongly recommend that, instead of *three years*, the term of service of the enlisted soldier be extended to five years, as heretofore. Indeed, it is essential to the character and efficiency of the army that the enlisted men should become habituated to the life of a soldier, and be well instructed in his duties; which cannot be the case if the term of enlistment continue at the short period of only three years; for, by the time a soldier is well initiated into all his duties, and is capable of assuming a military air, his term of service expires and a new recruit supplies his place. The cavalry service, especially, requires a much longer period than three years; for in that time they can hardly be considered any thing more than recruits.

It is of great consequence that the several regiments and corps should be effective in officers as well as in men. From age and exposure, officers are liable to be rendered unfit for active service, or, indeed, for any service at all; but as there is no provision by law for superannuated or decayed officers, who may have spent their best days in the public military service, and thus officers so situated cannot, for the want of means, retire—their pay during their period of activity having barely supported them, there has occurred to me, and I beg leave to recommend to your consideration, a plan by which such officers might be provided for out of the appropriation for the support of the several regiments, thus: Suppose the colonel of a regiment, having served thirty years, and finding himself unfit for the active duties of the field, is desirous of retiring; it would be profitable to the Government to allow him to do so, and to receive the full pay of his rank, without any other allowances, during the existence of his regiment, or of his own natural life; then the lieutenant colonel highest in rank, who would, according to the established rules of promotion, be entitled to be promoted to his place in case of his death or resignation, should be promoted accordingly, but to enjoy the pay of lieutenant colonel and the rank and emoluments and allowances of colonel; so the major first in the regular course of promotion to become lieutenant colonel, with the pay of major and the emoluments of lieutenant colonel; and the captain first in order of promotion to become the major, with the pay of captain and the emoluments of major; and so on with the first lieutenant, who should become captain; a second lieutenant should become first lieutenant, and the brevet second lieutenant become second lieutenant; and thus the place of every other officer unfit for service would be filled by an effective officer. As soon as any of the retired officers may die, the officers acting in their places should receive the full pay of

their respective ranks. Such a plan, while it would refresh the army, and render it more vigorous and effective, could not be otherwise than very gratifying to all concerned.

I beg leave to draw your attention to the fact that there is no provision made by law for the widows and orphans of the officers of the regular army who may die in consequence of wounds received or diseases contracted by exposure in the service; while there is a provision of that nature for all other descriptions of troops, whether militia, rangers, sea-fencibles or volunteers, as will appear by the act of the 4th July, 1836. There are the widows of several meritorious officers and soldiers now suffering, by the deprivation of their natural protectors, who have sacrificed their lives in their country's service, to whom the extension of the provisions of that law would be a great relief; and I am sure, with a knowledge of that fact, that you will see the justice of urging on Congress the application of the benefits of that law to the widows and orphans of the members of the regular army who have thus died in the service.

Respectfully submitted.

ALEX. MACOMB,
Major General com'dg in chief.

To the Hon. JOEL R. POINSETT,
Secretary of War.

A.

Organization of the Army of the United States—1837.

	Major General.	Brigadier Generals.	Adjutant General.	Inspectors General.	Quartermaster General.	Quartermasters.	Commissary Gen'l of Subsistence.	Commissaries.	Surgeon General.	Surgeons.	Assistant Surgeons.	Paymaster General.	Paymasters.	Commiss'y Gen'l of Purchases.	Military Storekeepers.	Colonels.	Lieutenant Colonels.	Majors.	Adjutants.	Captains.	First Lieuten ants.	Second Lieutenants.	Sergeant Majors.	Quartermaster Sergeants.	Sergeants.	Corporals.	Principal Musicians.	Chief Buglers.	Buglers.	Musicians.	Farriers and Blacksmiths.	Artificers.	Enlisted men for Ordnance.	Privates.	Total commissioned.	Total non-commissioned officers, musicians, artificers, & privates.	Aggregate.
General Staff	1	2	1	2	1	4	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	14
Medical Department	-	-	-	-	-	-	-	-	-	11	5	60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	76	76
Pay Department	-	-	-	-	-	-	-	-	-	-	-	-	11	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18	18
Purchasing Departm't	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3
Corps of Engineers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2	-	6	6	-	-	-	-	-	-	-	-	-	-	-	-	-	22	22
Topograp'l Engineers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
Ordnance Department	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2	-	10	-	-	-	-	44	-	-	-	-	-	-	250	-	294	14	308	308
1st Reg't of Dragoons	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	10	10	1	1	40	40	1	2	220	-	10	-	-	600	715	715	749
2d Reg't of Dragoons	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	10	10	1	1	40	40	1	2	220	-	10	-	-	600	715	715	749
Aggregate of Dragoons	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	20	20	2	2	80	80	2	4	440	-	20	-	-	1,200	1,430	1,430	1,498
1st Reg't of Artillery	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	9	18	1	1	36	36	-	-	-	18	-	27	-	378	48	497	545
2d Reg't of Artillery	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	9	18	1	1	36	36	-	-	-	18	-	27	-	378	48	497	545
3d Reg't of Artillery	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	9	18	1	1	36	36	-	-	-	18	-	27	-	378	48	497	545
4th Reg't of Artillery	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	9	18	1	1	36	36	-	-	-	18	-	27	-	378	48	497	545
Aggregate of Artillery	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4	4	-	36	72	4	4	144	144	-	-	-	72	-	108	-	1,512	192	1,988	2,180

| | | |

B.—*General Return of the Army of*

	Major General.	Brigadier Generals.	Adjutant General.	Inspectors General.	Quartermaster General.	Quartermasters.	Commissary General of Subsistence.	Commissaries.	Surgeon General.	Surgeons.	Assistant Surgeons.	Paymaster General.	Paymasters.	Commissary General of Purchases.	Military Storekeepers.
General Staff	1	2	1	2	1	4	1	2							
Medical Staff	-	-	-	-	-	-	-	-	1	15	60				
Pay Department	-	-	-	-	-	-	-	-	-	-	-	1	17		
Purchasing Department	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2
Corps of Engineers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Topographical Engineers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ordnance Department	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aggregate	1	2	1	2	1	4	1	2	1	15	60	1	17	1	2
First Regiment of Dragoons	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Second Regiment of Dragoons	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aggregate of Dragoons	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
First Regiment of Artillery	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Second Regiment of Artillery	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Third Regiment of Artillery	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fourth Regiment of Artillery	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aggregate of Artillery	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
First Regiment of Infantry	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Second Regiment of Infantry	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Third Regiment of Infantry	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fourth Regiment of Infantry	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fifth Regiment of Infantry	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sixth Regiment of Infantry	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Seventh Regiment of Infantry	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aggregate of Infantry	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Recruits and unattached soldiers															
Grand aggregate	1	2	1	2	1	4	1	2	1	15	60	1	17	1	2

the United States for the year 1837.

PRESENT.

For duty.																	Sick.				On extra or daily duty.			
Colonels.	Lieutenant Colonels.	Majors.	Adjutants.	Captains.	Subalterns.	Sergeant Majors.	Quartermaster Sergeants.	Sergeants.	Corporals.	Principal Musicians.	Chief Buglers.	Buglers.	Musicians.	Farriers and Blacksmiths.	Artificers.	Privates.	Field officers.	Captains.	Subalterns.	Non-commissioned officers, musicians, artificers, and privates.	Field officers.	Captains.	Subalterns.	Non-commissioned officers, musicians, artificers, and privates.
1	1	2	-	6	18																			
-	-	6	-	4																				
1	1	2	-	10																				
2	2	10	-	20	18																			
1	1	1	1	7	14	1	-	29	22	-	1	12	-	8	-	277	-	-	1	120	-	1	-	62
1	1	1	1	10	19	1	-	28	29	1	1	16	-	5	-	384	-	-	-	68	-	-	-	22
2	2	2	2	17	33	2	-	57	51	1	2	28	-	13	-	661	-	-	1	188	-	1	-	84
-	-	1	-	6	14	-	-	5	13	-	-	-	3	-	10	288	-	-	-	31	1	-	2	9
-	1	-	-	5	22	-	-	14	15	-	-	-	7	-	13	230	-	1	-	23	-	1	5	21
-	1	1	-	3	18	1	-	15	14	-	-	-	7	-	8	163	-	-	-	25	1	-	2	16
-	1	1	-	5	18	-	-	20	22	-	-	-	8	-	9	238	-	-	-	27	-	1	5	17
-	3	5	-	19	72	1	-	54	64	-	-	-	25	-	40	919	-	1	-	106	2	2	14	63
1	1	-	-	8	9	1	1	20	17	1	-	1	6	-	-	167	-	-	-	50	-	-	-	12
-	1	1	-	7	16	1	1	17	28	2	-	-	15	-	-	345	-	-	-	38	-	1	-	46
1	1	-	-	7	14	1	1	20	20	2	-	1	10	-	-	171	-	-	-	26	-	-	1	99
-	1	1	-	3	11	1	1	14	25	1	-	-	12	-	-	284	-	-	-	53	-	-	1	22
1	-	1	-	5	16	-	1	21	12	1	-	1	8	-	-	115	-	-	-	11	-	-	-	37
-	1	1	-	5	13	1	-	11	10	-	-	-	3	-	-	293	-	-	-	38	-	-	-	24
-	1	1	-	5	9	1	1	21	26	2	-	2	12	-	-	284	-	-	-	68	1	-	1	54
3	6	5	-	40	88	6	6	124	138	9	-	5	66	-	-	1,659	-	-	-	284	1	1	3	294
7	13	20	2	96	211	9	6	235	253	10	2	33	91	13	40	3,239	-	1	1	578	3	4	17	441

B—Continued.

	PRESENT.					
	In arrest or confinement.					
	Field officers.	Captains.	Subalterns.	Non-commissioned officers, musicians, artificers, and privates.	Commissioned officers.	Non-commissioned officers, musicians, artificers, & privates.
General Staff	–	–	–	–	13	–
Medical Staff	–	–	–	–	76	–
Pay Department	–	–	–	–	18	–
Purchasing Department	–	–	–	–	3	–
Corps of Engineers	–	–	–	–	28	–
Topographical Engineers	–	–	–	–	10	–
Ordnance Department	–	–	–	–	14	195
Aggregate	–	–	–	–	162	195
First Regiment of Dragoons	–	–	–	30	27	562
Second Regiment of Dragoons	–	–	–	8	33	563
Aggregate of Dragoons	–	–	–	38	60	1,125
First Regiment of Artillery	–	–	–	4	24	363
Second Regiment of Artillery	–	–	–	10	35	333
Third Regiment of Artillery	–	–	–	4	26	253
Fourth Regiment of Artillery	–	–	–	6	31	347
Aggregate of Artillery	–	–	–	24	116	1,296
First Regiment of Infantry	–	–	–	6	19	282
Second Regiment of Infantry	–	–	–	21	26	514
Third Regiment of Infantry	–	–	–	33	24	384
Fourth Regiment of Infantry	–	–	–	6	17	419
Fifth Regiment of Infantry	–	–	–	1	23	208
Sixth Regiment of Infantry	–	–	–	5	20	385
Seventh Regiment of Infantry	–	–	–	23	18	494
Aggregate of Infantry	–	–	–	95	147	2,686
Recruits and unattached soldiers	–	–	–	–	–	1 418
Grand aggregate	–	–	–	157	485	6,720

ADJUTANT GENERAL'S OFFICE, *Washington, Nov.* 30, 1837.

R. JONES, *Adj. Gen. of the Army.*

B—Continued.

ABSENT.									PRESENT AND ABSENT.	
Detached service.				With leave, or on furlough.						
Field officers.	Captains.	Subalterns.	Non-commissioned officers, musicians, artificers, and privates.	Field officers.	Captains.	Subalterns.	Non-commissioned officers, musicians, artificers, and privates.	Non-commissioned officers, &c., sick.	Total.	Aggregate.
–	–	–	–	–	–	–	–	–	–	13
–	–	–	–	–	–	–	–	–	–	76
–	–	–	–	–	–	–	–	–	–	18
–	–	–	–	–	–	–	–	–	–	3
–	–	–	–	–	–	–	–	–	–	28
–	–	–	–	–	–	–	–	–	–	10
–	–	–	–	–	–	–	–	–	195	209
–	–	–	–	–	–	–	–	–	195	357
–	2	3	61	–	–	2	–	–	623	657
–	–	1	17	–	–	–	–	64	644	678
–	2	4	78	–	–	2	–	64	1,267	1,335
1	2	12	11	–	1	6	2	21	397	443
2	1	8	10	–	1	–	6	18	367	414
–	5	10	11	–	1	2	1	18	283	327
1	3	11	7	–	–	2	7	13	374	422
4	11	41	39	–	3	10	16	70	1,421	1,606
1	2	7	2	–	–	3	1	3	288	320
1	1	4	3	–	1	–	2	8	527	560
1	3	3	11	–	–	1	–	9	404	436
1	7	5	10	–	–	3	–	74	503	536
1	5	2	13	–	–	2	2	6	229	262
1	4	4	6	–	1	1	6	32	429	460
–	5	6	11	–	–	4	5	1	511	544
6	27	31	56	–	2	14	16	133	2,891	3,118
–	–	–	–	–	–	–	–	–	1,418	1,418
10	40	76	173	–	5	26	32	267	7,192	7,834

HEADQUARTERS OF THE ARMY, *Washington, Nov.* 30, 1837.

ALEX. MACOMB, *Maj. Gen. Commanding-in-chief.*

C.

Position and distribution of the troops of the Eastern Division,

Number.	Posts.	Situations.	Commanding officers.	Regiments.
1	Fort Winnebago -	Port. Fox & Wisc. r. Mi.	Major J. Green -	5th infantry
2	Fort Brady -	Sault Ste. Marie do	Bvt. Maj. W. V. Cobbs	2d infantry
3	Fort Mackinac -	Michilimackinac do		
4	*Fort Howard -	Green Bay do	Bg. Gen. G. M. Brooke	5th infantry
5	Fort Dearborn -	Hd. of Lake Mich'n, Il.	Capt. L. T. Jamison -	5th infantry
6	Fort Gratiot -	Outlet of L. Huron, Mic.		
7	Fort Niagara -	New York, N. Y.		
8	Madison barracks -	Sackett's Harbor, do		
9	Hancock barracks	Houlton, Me.	Maj. N. S. Clarke -	2d infantry
10	*Fort Sullivan -	Eastport, do.		
11	*Fort Preble -	Portland, do.		
12	*Fort Constitution -	Portsmouth, N. H.		
13	*Fort Independence	Boston, Mass.		
14	*Fort Wolcott -	Newport, R. I.		
15	*Fort Trumbull -	New London, Ct.		
16	West Point -	West Point N. Y.	Bvt. Lt. Col. De Russy	Detachments
17	*Fort Columbus	New York harbor, do		
18	*Fort Hamilton			
19	*Fort Lafayette			
20	*Fort McHenry -	Baltimore, Md.		
21	*Fort Severn -	Annapolis, do	Bvt. Col. J. B. Walbach	1st artillery
22	*Fort Washington -	Left bank Potomac, do	Bvt. Major Saunders -	1st artillery
23	*Fort Monroe -	Old Point Comfort, Va.	Bvt. Major Erving -	4th artillery
24	*Fort Johnston -	Near Smithville, N. C.		
25	*Fort Caswell -	On Oak island, do		
26	*Fort Macon -	Near Beaufort, do		
27	*Fort Moultrie	Charleston harbor, S. C.		
28	*Castle Pinckney			
29	*Oglethorp barr'ks	Savannah, Ga.		
30	†Fort Marion -	St. Augustine, Flo.		
31	*Key West -	Key West, do		
32	†Fort Brooke -	Tampa Bay, do		
33	†Fort King -	Alachua, do		
34	*Fort Mitchell -	Near Creek Agen'y, Al.		
35	*Fort Pickens -	On St. Rosa island, Flo.		
36	*Fort Morgan -	Mobile Point, Ala.		
37	*New Orleans -	New Orleans, La.		
38	Fort Pike -	Petite Coquille do	Lt. M. J. Burke, 1st art.	2d artillery
39	*Fort Wood -	Chef Menteur do		
40	*Baton Rouge -	Baton Rouge do	Bvt. Major Lear -	4th infantry
41	Fort Cass -	Near Calhoun, Ten.	Lieut. C. S. Howe -	4th infantry
				Aggregate

C.

under the command of Brevet Major General Winfield Scott.

Number of companies.	PRESENT.										ABSENT.							PRESENT AND ABSENT.		
	Colonel.	Lieut. Colonel.	Majors.	Surgeon.	Assistant Surgeons.	Captains.	Subalterns.	Non-commissioned officers, musicians, artificers, & privates.	Total commissioned.	Aggregate.	Field officers.	Surgeons and assistant surgeons.	Captains.	Subalterns.	Non-commissioned officers, musicians, artificers & privates.	Total commissioned.	Aggregate.	Commissioned officers.	Non-commissioned officers, musicians, artificers, & privates.	Aggregate.
3	–	–	1	1	–	1	5	65	8	73	–	–	2	2	3	4	7	12	68	80
2	–	–	–	–	1	2	2	101	5	106	–	–	–	2	2	2	4	7	103	110
1	1	–	–	–	1	1	1	40	4	44	–	–	–	–	3	–	3	4	43	47
–	–	–	–	–	–	1	–	–	1	1	–	–	–	–	–	–	–	1	–	1
2	–	–	1	–	1	1	2	81	5	86	–	–	1	1	1	2	3	7	82	89
–	–	–	–	–	–	–	–	95	–	95	–	–	–	–	–	–	–	–	95	95
–	–	1	–	–	–	–	–	–	1	1	–	–	–	–	–	–	–	1	–	1
–	–	–	–	–	–	1	–	–	1	1	–	–	–	–	–	–	–	1	–	1
–	–	–	–	–	–	1	–	–	1	1	–	–	–	–	–	–	–	1	–	1
1	–	–	–	–	–	–	–	55	–	55	–	–	1	3	–	4	4	4	55	59
–	–	–	–	–	–	1	–	–	1	1	–	–	–	–	–	–	–	1	–	1
1	–	–	–	–	–	–	2	40	2	42	–	–	1	–	3	1	4	3	43	46
10	1	1	2	1	3	9	12	477	29	506	–	–	5	8	12	13	25	42	489	531

C—Continued.

Regiments.	Number of companies.	PRESENT.										ABSENT.							PRESENT AND ABSENT.		
		Colonels.	Lieutenant colonels.	Majors.	Surgeons.	Assistant surgeons.	Captains.	Subalterns.	Non-commissioned officers, musicians, artificers, & privates.	Total commissioned.	Aggregate.	Field officers.	Surgeons & assistant surgeons.	Captains.	Subalterns.	Non-commissioned officers, musicians, artificers, & privates.	Total commissioned.	Aggregate.	Commissioned officers.	Non-commissioned officers, musicians, artificers, & privates.	Aggregate.
2d reg. of drag.	10	1	1	1	-	-	10	20	563	33	596	-	-	-	1	81	1	82	34	644	678
1st reg. of art.	9	1	-	1	-	-	6	16	363	24	387	1	-	3	18	34	22	56	46	397	443
2d reg. of art.	8	-	1	-	-	-	6	25	279	32	311	2	-	2	7	33	11	44	43	312	355
3d reg. of art.	9	1	1	1	-	-	3	20	253	26	279	-	-	6	12	30	18	48	44	283	327
4th reg. of art.	9	-	1	1	-	-	6	23	347	31	378	1	-	3	13	27	17	44	48	374	422
Aggregate -	35	2	3	3	-	-	21	84	1242	113	1355	4	-	14	50	124	68	192	181	1366	1547
1st reg. of inf.	10	1	1	-	-	-	8	9	282	19	301	1	-	2	10	6	13	19	32	288	320
2d reg. of inf.	6	-	1	-	-	-	5	10	332	16	348	1	-	1	2	10	4	14	20	342	362
4th reg. of inf.	9	-	1	-	-	-	3	4	379	8	397	2	-	6	12	81	20	101	28	460	488
6th reg. of inf.	7	-	1	-	-	-	3	5	294	9	303	1	-	4	6	38	11	49	20	332	352
Aggregate -	32	1	4	-	-	-	19	28	1287	52	1339	5	-	13	30	135	48	183	100	1422	1522
Recruits -	-	-	-	-	-	-	-	-	1060	-	1060	-	-	-	-	-	-	-	-	1060	1060
Marines -	-	-	-	-	-	-	1	3	170	4	174	-	-	-	1	15	-	16	-	185	190
Aggregate -	77	4	8	4	5	20	51	135	4322	227	4552	9	-	27	82	355	117	473	312	4677	5022

C—Continued.

No.	POSTS.	REMARKS.
1	Fort Winnebago -	
2	Fort Brady -	
3	Fort Mackinac -	Abandoned.—Garrison withdrawn, 10th June, 1837.
4	*Fort Howard -	Garrison withdrawn, 24th August 1837.
5	Fort Dearborn -	Abandoned.—Garrison withdrawn, 29th December, 1836.
6	Fort Gratiot -	Abandoned.—Garrison withdrawn, 9th June 1837.
7	Fort Niagara -	Abandoned.—Garrison withdrawn, 10th May, 1834.
8	Madison barracks -	Abandoned.—Garrison withdrawn, 20th May, 1832.
9	Hancock barracks -	
10	*Fort Sullivan -	Garrison withdrawn, -- July, 1836.
11	*Fort Preble -	Garrison withdrawn, 30th May, 1836.
12	*Fort Constitution -	Garrison withdrawn, 27th May, 1836.
13	*Fort Independence -	Garrison withdrawn, 29th May, 1836.
14	*Fort Wolcott -	Garrison withdrawn, 22d May, 1836.
15	*Fort Trumbull -	Garrison withdrawn, 23d May, 1836.
16	West Point -	
17	*Fort Columbus	Garrison withdrawn, May and June, 1836.
18	*Fort Hamilton	
19	*Fort Lafayette	
20	*Fort McHenry -	Garrison withdrawn, 20th May, 1836.
21	*Fort Severn -	Garrison withdrawn, 8th February, 1836.
22	*Fort Washington -	Garrison withdrawn, 27th June, 1836.
23	*Fort Monroe -	Garrison withdrawn, -- May, 1836.
24	*Fort Johnston -	Garrison withdrawn, 3d February, 1836.
25	*Fort Caswell -	
26	*Fort Macon -	Garrison withdrawn, 2d February, 1836.
27	*Fort Moultrie -	Garrison withdrawn, January and February, 1836.
28	*Castle Pinckney -	Garrison withdrawn,
29	*Oglethorpe barracks	Garrison withdrawn, 29th June, 1836.
30	†Fort Marion -	
31	*Key West -	Garrison withdrawn, — September, 1836.
32	†Fort Brooke -	
33	†Fort King -	
34	*Fort Mitchell -	Abandoned.—Garrison withdrawn, 15th November, 1837.
35	*Fort Pickens -	Garrison withdrawn, 24th November, 1835.
36	*Fort Morgan -	Garrison withdrawn, 30th November, 1835.
37	*New Orleans -	Abandoned.—Garrison withdrawn, -- February, 1836.
38	Fort Pike -	
39	*Fort Wood -	Garrison withdrawn, 19th December, 1835.
40	*Baton Rouge -	Garrison withdrawn, 29th June, 1836.
41	Fort Cass -	

C—Continued.

Memorandum of regular troops serving in Florida, under the command of Brevet Major General Thomas S. Jesup.

GENERAL AND FIELD OFFICERS OF THE ARMY.

Brevet Brigadier General W. K. Armistead; Brevet Brigadier General A. Eustis; Colonel Z. Taylor, 1st infantry; Colonel D. E. Twiggs, 2d dragoons; Lieutenant Colonel A. Cummings, 2d infantry; Lieutenant Colonel W. Davenport, 1st infantry; Lieutenant Colonel J. Bankhead, 4th artillery; Lieutenant Colonel J. B. Crane, 2d artillery; Lieutenant Colonel W. S. Foster, 4th infantry; Lieutenant Colonel W. S. Harney, 2d dragoons; Lieutenant Colonel A. R. Thompson, 6th infantry; Lieutenant Colonel W. Gates, 3d artillery; Brevet Lieutenant Colonel A. C. W. Fanning, major 4th artillery; Major S. Churchill, 3d artillery; Brevet Lieutenant Colonel B. K. Pierce, major 1st artillery; Major T. T. Fauntleroy, 2d dragoons; Major B. Riley, 4th infantry.

REMARKS.

1. The garrisons have been withdrawn from posts marked (*), and are now serving in Florida.

2. The troops at these posts (†), although regarded as permanent stations, so often vary in number, &c., that they are considered as being in the field rather than in garrison, and are therefore omitted in the table. According to the last returns, the force at each was as follows:

	Com'd officers.	Men.
Fort Marion, St. Augustine - -	7	82
Fort King, Florida - -	7	159
Fort Brooke, Tampa Bay - -	65	1,596

Troops are also stationed at various other places in Florida, but the specification of the force present is, for the same reason, omitted.

3. Many of the officers reported "absent" by their respective commanders, are serving elsewhere in Florida, on duty connected with the service in that quarter.

The number on the sick list, as reported on the 31st October, is about 359 present.

STAFF.

Four aids-de-camp, two quartermasters, six assistant quartermasters, one commissary, five surgeons, twenty assistant surgeons.

ADJUTANT GENERAL'S OFFICE,
Washington, November 30, 1837.

R. JONES,
Adj. Gen. of the Army.

C—Continued.

Memorandum of the volunteer force provided for the service in Florida, in aid of the suppression of the hostilities of the Seminole Indians.

Missouri mounted volunteers, about - - - -	477
Tennessee do do - - - -	504
Alabama do do - - - -	906
Washington city, D. C. (foot) - - - - -	66
Philadelphia (foot) - - - - - -	425
Louisiana (foot) - - - - - -	250
	2,628

The above statement of volunteers is derived from the muster-rolls received at the Adjutant General's office, (except the 250 raised at New Orleans,) which force is supposed to have arrived in Florida in all November. Volunteers for Florida have been authorized to be raised in New York and Baltimore, but it is not known how many will be mustered into service.

Returns of the Florida volunteers are irregular and seldom received, and are supposed to be but partially made; the commanding general reports the difficulties and the delay in obtaining them. The number of volunteers of the Territory may be *estimated* at about - - - - 1,400

Total volunteers - - - - - - -	4,028
United States seamen, under Lieutenant Powell of the navy - -	100
Of the Indian force authorized to be raised for the Florida service, 178 under Lieutenant Poole, 3d artillery, left Jefferson barracks for Tampa Bay on 11th October - - - - - - -	178
	4,306

HEADQUARTERS OF THE ARMY,
Washington, November 30, 1837.

ALEX. MACOMB,
Maj. Gen. Commanding in Chief.

D.

Position and distribution of the troops of the Western Division, un

	POSTS.	SITUATION.	COMMANDING OFFICERS.
1	Fort Snelling - -	Upper Mississippi - -	Brevet Major Plympton -
2	Fort Crawford - -	Prairie du Chien - -	Captain W. Alexander -
3	Fort Armstrong* -	Rock island, Ill.	
4	Fort Des Moines† -	Right bank of the Mississippi.	
5	Fort Leavenworth -	Right bank of the Missouri, near the Little Platte -	Colonel S. W. Kearney -
6	Jefferson barracks‡ -	Near St. Louis, Missouri -	Brig. Gen. Atkinson
7	Fort Gibson - -	Arkansas - - -	Bt. Brig. Gen. Arbuckle
8	Fort Coffee - -	Arkansas - - -	Captain J. Steuart -
9	Fort Towson - -	On the Kiamichi, Arkansas -	Lieut. Col. Vose - -
10	Fort Jesup§ - -	Near Natchitoches, La. - -	Colonel Many - -
11	Fort Jackson‖ - -	Near New Orleans, La.	
12	Camp Sabine - -	Near Fort Jesup, La. - -	Major Glassell - -

* Abandoned ; garrison withdrawn May 4, 1836.
† Abandoned ; garrison withdrawn June 1, 1837.
‡ Garrison withdrawn October 1, 1837.
§ Two companies of the Fort Jesup garrison (temporarily absent) are engaged in removing obstructions from the Sabine river.
‖ Garrison withdrawn May 11, 1835.

ADJUTANT GENERAL'S OFFICE,
Washington, November 30, 1837.

R. JONES, *Adjutant General of the Army.*

D.

der the command of Brevet Major General Edmund P. Gaines.

Regiments.	Number of companies.	PRESENT.										ABSENT.							PRESENT AND ABSENT.		
		Colonels.	Lieutenant colonels.	Majors.	Surgeons.	Assistant surgeons.	Captains.	Subalterns.	Non-commissioned officers, musicians, artificers, &c.	Total commissioned.	Aggregate.	Field officers.	Surgeons and ass't surgeons.	Captains.	Subalterns.	Non-commissioned officers, musicians, artificers, &c.	Total commissioned.	Aggregate.	Commissioned officers.	Non-commissioned officers, musicians, artificers, &c.	Aggregate.
5 infan.	4	-	-	-	-	1	2	6	57	9	66	-	-	2	2	11	4	15	13	68	81
5 do	2	-	-	-	1	1	1	3	49	6	55	-	-	1	1	6	2	8	8	55	63
1 drag.	6	1	1	-	1	2	4	12	391	21	412	-	-	2	1	16	3	19	24	407	431
1 drag.	4	-	-	1	-	1	3	3	206	8	214	-	-	1	4	7	5	12	13	213	226
7 infan.	9	1	1	1	-	1	3	7	447	14	461	-	-	6	11	13	17	30	31	460	491
7 do	1	-	-	-	-	1	1	1	47	3	50	-	-	-	1	4	1	5	4	51	55
3 do	4	-	1	-	-	2	1	3	90	7	97	-	-	3	5	5	8	13	15	95	110
3 do	6	1	-	-	1	2	5	8	294	17	311	1	-	1	3	15	5	20	22	309	331
6 do	3	-	-	1	-	1	1	3	91	6	97	-	-	2	3	6	5	11	11	97	108
	39	3	3	3	3	12	21	46	1,672	91	1,763	1	-	18	31	83	50	133	141	1,755	1,896

HEADQUARTERS OF THE ARMY,
Washington, November 30, 1837.

ALEX. MACOMB,
Major General Comd'g in Chief.

Z.

Return of the army employed in Florida against the Seminole Indians,

Regiments and Corps.	Number of Companies.	Letters of Companies.	PRESENT. For													
			Brevet Major General.	Brevet Brigadiers General.	Aids-de-camp.	Quartermasters.	Assistant Quartermasters.	Commissaries.	Assistant Commissaries.	Surgeons.	Assistant Surgeons.	Colonels.	Lieutenant Colonels.	Majors.	Adjutants.
Staff - - - -	–	–	1	*2	*4	2	*6	*1	–	5	20				
Second regiment of Dragoons -	10	a b c d e f g h i k	–	–	–	–	–	–	–	–	–	1	1	1	1
First regiment of Artillery -	9	a b c d e f g h i	–	–	–	–	–	–	–	–	–	–	–	1	–
Second regiment of Artillery -	8	b c d e f g h i	–	–	–	–	–	–	–	–	–	–	1	–	–
Third regiment of Artillery -	9	a b c d e g h i	–	–	–	–	–	–	–	–	–	–	1	1	–
Fourth regiment of Artillery -	9	a b c d e f g h i	–	–	–	–	–	–	–	–	–	–	1	1	–
Aggregate of Artillery -	35	–	–	–	–	–	–	–	–	–	–	–	3	3	–
First regiment of Infantry -	10	a b c d e f g h i k	–	–	–	–	–	–	–	–	–	1	1	–	–
Second regiment of Infantry -	6	a b f g h k	–	–	–	–	–	–	–	–	–	–	1	–	–
Fourth regiment of Infantry -	9	a b c d e g h i k	–	–	–	–	–	–	–	–	–	–	1	–	–
Sixth regiment of Infantry -	7	a b f g h i k	–	–	–	–	–	–	–	–	–	–	1	–	–
Aggregate of Infantry -	32	–	–	–	–	–	–	–	–	–	–	1	4	–	–
Marines - - -	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Recruits in Florida, but not assigned to companies, at the dates of last returns - -															
Aggregate of regular troops -	–	–	1	–	–	2	–	–	–	5	20	2	8	4	1
Volunteers.															
Missouri, mounted - -	10	–	–	–	–	1	–	1	–	1	1	1	1	2	1
Tennessee, mounted - -	6	–	–	–	–	–	1	–	–	–	1	–	–	1	1
Alabama, mounted - -	12	–	–	–	–	–	1	–	1	1	1	1	1	1	1
Washington, D. C., foot -	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Philadelphia, foot - -	6	–	–	–	–	–	–	–	–	–	–	–	–	–	–
New Orleans, foot - -	4	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Florida - - - -	20	–	–	1	1	3	–	–	–	2	1	2	2	3	2
Seamen - - -	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Aggregate of Volunteers -	59	–	–	1	1	4	2	1	1	4	4	4	4	7	5
Indians - - - -	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Grand Aggregate - -	–	–	1	1	1	6	2	1	1	9	24	6	12	11	6

* Not included in the aggregate of the Staff, being accounted for in their regiments.

Z.

under the command of Brevet Major General Thomas S. Jesup.

PRESENT.

duty.										Sick.						On extra or daily duty.						
Captains.	Subalterns.	Sergeants Major.	Quartermaster Sergeants.	Sergeants.	Corporals.	Principal Musicians.	Musicians.	Artificers, Farriers, and Blacksmiths.	Privates.	Captains.	Subalterns.	Non-commissioned Officers.	Musicians.	Artificers, Farriers, and Blacksmiths.	Privates.	Field Officers.	Captains.	Subalterns.	Non-commissioned Officers.	Musicians.	Artificers, Farriers, and Blacksmiths.	Privates.
10	19	1	–	28	29	2	16	5	384	–	–	8	2	1	57	–	–	–	4	2	–	16
6	14	–	–	5	13	–	3	10	288	–	–	2	–	2	27	1	–	2	–	–	–	9
4	21	–	–	14	14	–	7	12	181	1	–	–	–	1	21	–	1	4	–	–	3	16
3	18	1	–	15	14	–	7	8	163	–	–	6	–	2	17	1	–	2	1	–	1	14
5	18	–	–	20	22	–	8	9	238	–	–	1	–	2	24	–	1	5	3	–	5	9
18	71	1	–	54	63	–	25	39	870	1	–	9	–	7	89	2	2	13	4	–	9	48
8	9	1	1	20	17	1	7	–	167	–	–	7	4	–	39	–	–	–	1	–	–	11
4	9	1	1	10	18	2	10	–	241	–	–	4	–	–	25	–	1	1	–	–	–	18
2	1	1	1	11	24	1	10	–	259	1	1	7	2	–	44	–	–	2	2	–	–	15
3	2	1	–	4	5	–	1	–	232	–	1	5	1	–	29	–	–	2	–	–	–	13
17	21	4	3	45	64	4	28	–	899	1	2	23	7	–	137	–	1	5	3	–	–	57
1	1	–	–	9	7	–	7	–	82	–	–	3	–	–	12	–	–	2	8	–	–	38
46	112	6	3	136	163	6	76	44	2235	2	2	43	9	8	295	2	3	20	19	2	9	159
10	19	1	1	38	36	2	6	–	352													
6	18	1	1	24	24	–	–	–	454													
12	24	1	1	48	48	1	12	–	795													
1	2	–	–	4	4	–	–	–	61													
6	12	–	–	24	24	–	1	–	409													
–	–	–	–	–	–	–	–	–	235													
20	36	2	–	78	71	–	15	–	933	–	1	3	1	–	102	–	–	–	–	–	–	2
–	1	–	–	–	–	–	–	–	100													
55	112	5	3	216	207	3	34	–	3339	–	1	3	1	–	102	–	–	–	–	–	–	2
4	–	–	–	–	–	–	–	–	174													
105	224	11	6	352	370	9	110	44	5748	2	3	46	10	8	397	2	3	20	19	2	9	161

Z—

Regiments and Corps.	Number of Companies.	Letters of Companies.	PRESENT.				ABSENT.			
			In arrest, or confinement.				On detached service.			
			Non-commissioned officers.	Privates.	Commissioned officers.	No-commissioned officers, musicians, artificers, and privates.	Field officers.	Captains.	Subalterns.	Non-commissioned officers, &c.
Staff - - - -	–	–	–	–	28	–	–	–	–	–
Second regiment of Dragoons -	10	a b c d e f g h i k	1	7	33	563	–	–	1	17
First regiment of Artillery -	9	a b c d e f g h i	2	2	24	363	1	2	12	11
Second regiment of Artillery -	8	b c d e f g h i	1	9	32	279	2	1	7	9
Third regiment of Artillery -	9	a b c d e f g h i	1	3	26	253	–	5	10	11
Fourth regiment of Artillery -	9	a b c d e f g h i	–	6	31	347	1	3	11	7
Aggregate of Artillery -	35	–	4	20	113	1242	4	11	40	38
First regiment of Infantry -	10	a b c d e f g h i k	–	6	19	282	1	2	7	2
Second regiment of Infantry -	6	a b f g h k	–	2	16	332	1	1	2	3
Fourth regiment of Infantry -	9	a b c d e g h i k	–	2	8	379	2	5	10	10
Sixth regiment of Infantry -	7	a b f g h i k	–	3	9	294	1	3	6	2
Aggregate of Infantry - -	32	–	–	13	52	1287	5	11	25	17
Marines - - -	–	–	1	3	4	170	–	–	1	13
Recruits in Florida, but not assigned to companies at the dates of last returns -	–	–	–	–	–	1060	–	–	–	–
Aggregate of regular troops -	–	–	6	43	230	4322	9	22	67	85
Volunteers.										
Missouri, mounted : -	10	–	–	–	38	436	–	–	–	–
Tennessee, mounted - -	6	–	–	–	28	504	–	–	–	–
Alabama, mounted - -	12	–	–	–	44	906	–	–	–	–
Washington, D. C., foot -	1	–	–	–	3	69	–	–	–	–
Philadelphia, foot - -	6	–	–	–	18	458	–	–	–	–
New Orleans, foot - -	4	–	–	–	15	235	–	–	–	–
Florida - - -	20	–	–	–	74	1207	–	–	6	49
Seamen - - -	–	–	–	–	1	100	–	–	–	–
Aggregate of Volunteers -	59	–	–	–	221	3915	–	–	6	49
Indians - - - -	–	–	–	–	4	174	–	–	–	–
Grand aggregate - -	–	–	6	43	455	8411	9	22	73	133

Adjutant General's Office, *Washington, November* 30, 1837.

R. JONES, *Adjutant General of the Army.*

Continued.

ABSENT.							PRESENT AND ABSENT.		
Furloughed, or with leave.			Without leave.						
Captains.	Subalterns.	Non-commissioned officers, &c.	Non-commissioned officers, &c., sick.	Non-commissioned officers, &c., confined.	Commissioned officers.	Non-commissioned officers, &c.	Total.	Aggregate.	Number of recruits required.
–	–	–	–	–	–	–	28	28	
–	–	–	61	3	–	–	644	678	71
1	6	2	18	3	–	–	397	443	100
1	–	6	18	–	–	–	312	355	130
1	2	1	17	1	–	–	283	327	214
–	2	7	11	2	–	–	374	422	123
3	10	16	64	6	–	–	1366	1547	567
–	3	1	1	2	–	–	288	320	22
–	–	–	2	4	–	1	342	362	
1	2	–	71	–	–	–	460	488	3
1	–	6	29	1	–	–	332	352	29
2	5	7	103	7	–	1	1422	1522	54
–	–	1	1	–	–	–	185	190	
–	–	–	–	–	–	–	1060	1060	
5	15	24	229	16	–	1	4677	5025	
–	–	–	–	–	–	–	436	474	
–	–	–	–	–	–	–	504	532	
–	–	–	–	–	–	–	906	950	
–	–	–	–	–	–	–	69	72	
–	–	–	–	–	–	–	458	476	
–	–	–	–	–	–	–	235	250	
–	–	76	9	–	–	–	1341	1421	
–	–	–	–	–	–	–	100	101	
–	–	76	9	–	–	–	4049	4276	
–	–	–	–	–	–	–	174	178	
5	15	100	238	16	–	1	8900	9479	

REMARKS.

NOTE.—Many of the officers and men reported "absent" by their respective commanders, are serving elsewhere in Florida, on duty connected with the service in that quarter; and, of the number reported "sick absent," about eighty have returned to the army.

HEADQUARTERS OF THE ARMY, *Washington, Nov.* 30, 1837.

ALEX. MACOMB, *Maj. Gen. Commanding in Chief.*

E.

ADJUTANT GENERAL'S OFFICE,
Washington, November 30, 1837.

Statement showing the whole number of recruits enlisted in the army from the 1st January to the 30th September, 1837, inclusive, according to the last returns received.

GENERAL RECRUITING SERVICE, EASTERN DEPARTMENT.

Colonel E. Cutler, 4th Infantry, General Superintendent.

New York, N. Y.	-	816	Martinsburg, Pa.	-	10
Albany, do	-	164	Providence, R. I.	-	8
Utica, do	-	103	Pittsburg, Pa.	-	77
Rochester, do	-	110	Brooklyn, N. Y.	-	42
Syracuse, do	-	117	Portland, Me.	-	11
Schenectady, do	-	98	Newport, Ky.	-	53
Buffalo, do	-	219	Newark, N. J.	-	34
Philadelphia, Pa.	-	369	Eastport, Me.	-	18
Baltimore, Md.	-	192	Lynchburg, Va.	-	12
Frederick, do	-	24	Dover, N. H.	-	4
Boston, Mass.	-	286	Total No. enlisted in		
Hartford, Ct..	-	260	Eastern Dep't	-	3,027

WESTERN DEPARTMENT.*

Lieutenant Colonel John Bliss, 6th Infantry, General Superintendent.

Newport, Ky.	-	10	Cincinnati, Ohio	-	4
Pittsburg, Pa.	-	11	Total No. enlisted in		
Louisville, Ky.	-	10	Western Dep't	-	46
St Louis, Mo.	-	11			
					3,073

BY REGIMENTS.

1st regiment dragoons	31		1st regiment infantry	51	
2d regiment dragoons	233		2d regiment infantry	90	
Total dragoons		264	3d regiment infantry	58	
1st regiment artillery	11		4th regiment infantry	61	
2d regiment artillery	71		5th regiment infantry	30	
3d regiment artillery	20		6th regiment infantry	24	
4th regiment artillery	10		7th regiment infantry	64	
Total artillery		112	Total infantry		378
			West Point detachment		32

* The inconsiderable number of men enlisted in the Western country induced the discontinuance of the recruiting service in this department since the 1st May, when a portion of the officers were ordered to the Eastern Department, and the residue to join their regiments. The station and depot at Newport Kentucky, has been continued, and Louisville recently re-established; and both are under the direction of the General Superintendent at New York.

STATEMENT E—Continued.

Total number enlisted from the 1st of January to the 30th of September, 1837 - - - - -		3,859
To the above may be added the number of recruits ascertained to have been enlisted during the month of October, 1837 - - - - - - -		357
Total number enlisted from the 1st January to the 31st October, 1837 - - - - - -		4,216
Amount of recruiting funds advanced to officers of the army from the 1st January to the 30th September, 1837 -	$24,750 00	
Amount of those funds accounted for within the same period	22,858 55	
Balance in hands of recruiting officers on the 30th September, 1837 - - - - - -		$1,891 45

Respectfully submitted:

R. JONES, *Adjutant General.*

Major General ALEX. MACOMB,
General-in-chief, Washington, D. C.

Proposed organization of each regiment of dragoons, artillery, and infantry.

Regiment of	Colonel.	Lieutenant Colonel.	Major.	Adjutant.	Sub-adjutants.	Sword-master.	Riding-master.	Captains.	First Lieutenants.	Second Lieutenants.	Sergeant Majors.	Quartermaster Sergeants.	Sergeants.	Corporals.	Musicians.	Saddlers.	Blacksmiths and Farriers.	Artificers.	Privates.	Total commissioned.	Total non-commissioned Officers, Privates, &c.	Aggregate.
Dragoons - - -	1	1	1	1	2	1	1	10	10	10	10	10	40	40	20	10	10	-	660	34	804	838
Artillery - - -	1	1	1	1	2	-	-	10	20	20	10	10	40	40	20	-	-	30	650	54	802	856
Infantry - - -	1	1	1	1	2	-	-	10	10	10	10	10	40	40	20	-	-	-	680	34	802	836

Note.—The adjutant is to be taken from among the subalterns, and to be an additional officer.

2 regiments of dragoons - - - - - - - - -	1,676
4 regiments of artillery - - - - - - - - -	3,424
12 regiments of infantry - - - - - - - - -	10,032
Proposed force of artillery, infantry, and dragoons - - - - - - - - -	15,132

No. 1.—Continued.

Proposed organization of each company of dragoons, artillery, and infantry.

Company of	Captain.	First Lieutenants.	Second Lieutenants.	Sergeant Major.	Quartermaster Sergeant.	Sergeants.	Corporals.	Musicians.	Saddler.	Blacksmith and Farrier.	Artificers.	Privates.	Total commissioned.	Total non-commissioned Officers, Musicians, and Privates.	Aggregate.
Dragoons - - - -	1	1	1	1	1	4	4	2	1	1	-	66	3	80	83
Artillery - - - -	1	2	2	1	1	4	4	2	-	-	3	65	5	80	85
Infantry - - - -	1	1	1	1	1	4	4	2	-	-	-	68	3	80	83

No. 2.

Proposed distribution of the troops.

	Regiments.			Total regiments.
	Dragoons.	Artillery.	Infantry.	
For the seaboard, including the forts on the Gulf of Mexico	-	4	-	4
For the posts in Florida and Alabama	-	-	1	1
For Baton Rouge	-	-	1	1
For the Texian frontier	-	-	2	2
For the Arkansas frontier	1	-	2	3
For the Missouri frontier	1	-	1	2
For Jefferson barracks, reserve	-	-	2	2
For the Upper Mississippi and across the country to the lakes	-	-	1	1
For the Lake frontier	-	-	1	1
For the Northern and Eastern frontier	-	-	1	1
	2	4	12	18

No. 8.

REPORT OF THE ACTING QUARTERMASTER GENERAL.

QUARTERMASTER GENERAL'S OFFICE,
Washington, November 20, 1837.

SIR: In compliance with your order, I have the honor to submit a report of the operations of the Quartermaster's department, during the fiscal year which terminated with the 30th of September last.

By the last annual report, which embraced in part the expenditures of the third quarter of the year 1836, the aggregate balance in the hands of the various disbursing officers and agents, for which accounts had not then been rendered, was - - $1,001,538 71

To which is to be added—

1st. The remittances made to those officers, namely:		
In the fourth quarter of 1836,	837,213 89	
In the first quarter of 1837,	1,309,577 22	
In the second quarter of 1837,	815,386 24	
In the third quarter of 1837,	907,483 99	
		3,869,661 34
2d. The funds derived from the sales of public property which had become unfit for service, or was no longer required for public use, and from rents for public grounds and buildings not occupied for military purposes - - -		38,769 47
Making an aggregate, comprising the outstanding balances, the remittances, and funds derived from other sources, of - -		$4,909,969 52

Of which the following sums have been accounted for:

1st. By expenditures, namely:		
In the fourth quarter of 1835, and the first, second, and third quarters of 1836, the accounts for which were received after the date of the last annual report,	284,687 96	
In the fourth quarter of 1836, - -	1,118,188 18	
In the first quarter of 1837, - -	1,106,479 46	
In the second quarter of 1837, - -	837,411 43	
In the third quarter of 1837, so far as the accounts have been received at this date,	911,805 17	
	4,258,572 20	
2d. By payments into the Treasury, and warrants rendered unavailable by the casualties of service, which were returned and cancelled, - - -	46,355 13	
Making the aggregate accounted for during the fiscal year,		4,304,927 33
And leaving in the hands of disbursing officers and agents, to be hereafter accounted for, an aggregate balance of		$605,042 19

The various objects of improvement which were in a state of suspense at the date of the last annual report, from the want of officers to superintend their execution, have remained so during the present year; nor can they be resumed or prosecuted with effect, under existing circumstances, without some augmentation of the force of the department. The only one in which any progress has been made, is the contemplated "military road" along the Western frontier, extending from the Upper Mississippi to Red river; and you are aware, from a special report lately submitted to you on this subject, that but little has been done towards that object.

The commissioners to whom were assigned the survey and location of the route of this road, are now engaged in an examination of that extensive frontier, and in treating with the various Indian tribes through whose country it will pass, for a right of way, in conformity to the provisions of the law; but of their precise progress and success, I am now unable to inform you, not having received a final report of their operations. It is believed, however, that no injury will result from the delay that has occurred, as it will afford an opportunity of reviewing the subject, in connexion with a general plan of defence, and of correcting what appears to me to be an error in the present scheme, which regards this road as a very important element in the means of protecting the frontier.

I have already had occasion, in complying with a previous call on me, to present you my humble views in detail on this subject. It will, therefore, only be necessary to observe here, that while roads leading *towards* the frontier, from the great sources of supply in the interior, are of the utmost importance as a means of defence, by facilitating military operations, those running *parallel* with the frontier, and passing through the Indian country by a gratuitous concession, cannot be of much utility, even in time of peace, and, from their liability to constant interruption by the enemy, will become wholly useless in time of war.

This feature in the present plan of defence seems to have originated in the idea of making the posts on the line of the frontier, though very widely separated, dependent on each other for support, while, by the plainest principle of military science, they should rely in common upon reserves stationed at eligible positions in the rear, held in readiness to be thrown forward to the point of alarm, by rapid water conveyance and by roads diverging to the frontier.

I would therefore respectfully submit for your consideration the expediency of suspending the application of the money appropriated by the act of 2d July, 1836, so far as it relates to opening a military road along the frontier, passing west of the States of Missouri and Arkansas, as the law enjoins; and of obtaining authority to apply the amount provided for that object to the construction of roads leading from the depots of supplies and the stations of the reserves, to such posts as it may be deemed necessary to establish on the frontier for the protection of the border settlements.

I would respectfully invite your attention to a serious embarrassment under which some of the disbursing officers of this department labor, on account of payments made by them, under orders from superior officers, for shoeing the horses of mounted volunteers called into service un-

der the act of 23d May, 1836. Those payments have been rejected by the accounting officers of the Treasury, as repugnant to the act of 19th of March, 1836, which provides forty cents per day to volunteers "for the use and risk" of their horses. As shoeing is indispensably necessary to insure the efficiency of the horses after they are received into service, and appears to me to be no more precluded by the allowance made for their use and risk than forage, which is allowed with a view to the same object, I do not concur in the decision of the accounting officers. But as the difficulty is supposed to result from the law, it will require legislative provision to relieve the disbursing agents from their embarrassment. The volunteers having been discharged from service, the payments, even if they be wrong, cannot possibly be recovered from them; and, unless the case be provided for, the losses must ultimately fall on the officers who gave the orders, some of whom have likewise been discharged from the public service.

In the last annual report, which it devolved on me to make to your predecessor, I urged, in general terms, the necessity for enlarging and improving the organization of the Quartermaster's department, so as to enable it to discharge its heavy duties with becoming promptness and efficiency; and in a subsequent special report, dated the 14th of January last, I endeavored to show the expediency of the measure by more detailed illustrations. As it would not be proper to repeat my suggestions here, I beg leave to refer you to those reports; they present, very fully, my humble views on the subject, and I could add but little more than to say that those views have been strengthened and confirmed by the experience of another year.

A reference to the fiscal exhibits of the department for the last two years will serve to convey some idea of the vast extent of its responsibilities, though a very inadequate one of its duties, and the labor incident to such heavy operations. The expenditures for that period have somewhat exceeded six million three hundred and fifty thousand dollars. From the want of an adequate organization, a considerable portion of those expenditures has necessarily been thrown upon temporary agents, without sufficient experience to enable them to guard the public interest effectually, and heavy losses have undoubtedly been sustained, by want of proper system and arrangement, even where all may have acted in perfect good faith.

But, from discoveries recently made, there is reason to fear that, in spite of all the vigilance that can be exercised by the accounting officers in the scrutiny of accounts, extensive frauds have been practised upon the public, by some of those temporary agents, acting in collusion with claimants in some instances, and in others with officers of the militia and volunteers in the service of the United States, who have thus shown themselves capable of tarnishing an honorable profession by associating with it a sordid spirit of gain. It has already been my duty to bring to your notice two cases of this kind, and, under your order, civil prosecutions are now in progress against the offenders, for the recovery of the money and the punishment of the crime. As it is due to justice that the guilty should be exposed, in order that the innocent may be relieved from suspicion, I annex to this report copies of all the papers in the cases referred to.

With an adequate organization, composed of faithful and experienced officers, the chief of a department may be held to a just responsibility

for the proper application to the public service of the funds confided to his administrative control; but if, from the want of such provision, the expenditure of a large portion of those funds is necessarily thrown upon faithless or incompetent agents, in whose selection he has had no hand, that responsibility will be much impaired, if not entirely destroyed.

It is gratifying to perceive that the name of no officer of the regular army is associated with the transactions referred to, except as the detecter and exposer of the frauds. Though serving their country for a pittance which is scarcely adequate to a decent support, they yet maintain their integrity unblemished, and show themselves superior to the temptations of gain, as well as the corrupting influence of the vicious associations into which a more than doubtful policy has thrown them.

I have the honor to be, sir,

Your most obedient servant,

T. CROSS,

Acting Quartermaster General.

The Hon. JOEL R. POINSETT,

Secretary of War.

Documents accompanying the Quartermaster General's annual report.

QUARTERMASTER GENERAL'S OFFICE,

Washington, August 21, 1837.

SIR: I submit, for your information and order in the case, a letter from Lieutenant S. P. Heintzelman, acting assistant quartermaster at Columbus, Georgia, enclosing sundry papers going to establish the perpetration of an extensive fraud which has been committed against the United States, in that vicinity, by a collusive understanding between Captain James C. Boyd, of the Alabama mounted volunteers, John M. Sanders, lieutenant, and Michael Connel, who styles himself "quartermaster of Captain Boyd's company."

Lieutenant Heintzelman had innocently paid those fictitious accounts, amounting to $6,570 20, without suspicion, on the joint certificate of Captain Boyd and his self-styled quartermaster, setting forth their general correctness, and specifically "that the forage had been actually purchased of J. M. Sanders, and justly and necessarily issued to the company; and that the team charged for, as hired to haul provisions, forage, and baggage, was thus employed in the service of the United States, during the period stated, and was necessary to enable the troops to operate against the Creek Indians."

The accompanying letter of Mr. Leonard Abercrombie and the deposition of Jeremiah Walker, will show how far those certificates conformed to the truth. The transaction needs no comment. Supposing it to be truly represented, (and, so far, Captain Boyd, though apprized of the imputations against him, has produced no counter-evidence,) it is eminently disgraceful to those concerned in it, considering that they were all at the time holding commissions in the military service, which entitled their certificates to credit in establishing the facts which are to determine

the propriety of claims against the United States. I know not whether these individuals are yet in service, nor whether there is any effective mode of reaching them; but if there is, both justice and policy require that they should be made examples of.

Lieutenant Heintzelman cannot be made resposible for the accuracy of facts of which he could know nothing, and which were vouched for by his superior officer with the usual formality. He was, I think, under the circumstances, and the latitude with which militia transactions are always regarded, justified in making the payments, and should, therefore, recive credit for the amount. But this will involve the very grave principle of admitting a charge against the public treasury, knowing it to be fraudulent.

How else he is to be relieved from the heavy responsibility in which he has thus been involved by the acts of others, I am not able to suggest; but that he is entitled to relief, cannot, I think, be denied.

I fear, sir, this is but one detected case out of hundreds of like character that have occurred during the late disturbances on the frontiers. Such abuses are incidental to the vicious system of employing a large militia and volunteer force to effect, at an almost countless expense, what might be so much better done by a moderate increase of the regular army. If, in despite of experience, that species of force is to be relied upon, we cannot too soon extend the disbursing departments of the regular staff, so as to have trustworthy agents sufficient to attend them, and thus keep the expenditures in faithful hands.

In no other way, allow me to add, can a just accountability be attained.

I have the honor to be, sir,
Your obedient servant,
T. CROSS,
Acting Quartermaster General.

Hon. J. R. POINSETT,
Secretary of War, Washington.

COLUMBUS, GEORGIA, *July* 12, 1837.

SIR: I have the honor to enclose herewith a copy of an affidavit of Jeremiah S. Walker, in reference to some accounts I paid on Captain James C. Boyd's certificate for team hire and forage for the use of his company.

Since I have had the affidavit, Captain Boyd has been here, and assured me he could furnish counter-affidavits to this statement, and that it is all a political affair. I yesterday saw an individual from the neighborhood where the company was stationed, and have had letters from there stating that Captain Boyd had offered half the amount he got for team hire to the individual purporting to have signed the account, to induce him to remain quiet, and is obtaining certificates from individuals of his company, under the promise of reward; and further, that he seldom had over a dozen men of his command imbodied at one time.

The three accounts I have paid are vouchers Nos. 108, 109, and 110, abstract B, 2d quarter 1837. The two forage accounts are signed by John M. Sanders, a lieutenant of the company.

I have no doubt the accounts certified to by Captain Boyd are entirely fictitious, and that no such transactions took place.

He is also accused of having forged the names of several persons to a power of attorney, and has drawn pay for several individuals who never rendered any service. He will probably be prosecuted for this last act.

The above statement, &c. are respectfully laid before you for instructions.

I have the honor to be, sir, very respectfully,

Your obedient servant,

S. P. HEINTZELMAN,

Lieutenant and A. A. Quartermaster.

Major TRUEMAN CROSS,

Acting Quartermaster General U. S. Army,

Washington.

P. S. I also enclose a copy of a letter received from a respectable gentleman in that neighborhood. S. P. H.

MUSCOGEE COUNTY, *Georgia:*

Personally appeared before me, George Chatfield, one of the justices of the peace in and for said county, Jeremiah S. Walker, and made oath that he was a private in Captain James C. Boyd's company of mounted Alabama volunteers, in the service of the United States for the suppression of Indian hostilities; and that the men of said company, during their term of service, furnished their own rations of provisions and forage, and that there was no team hired for the transportation of the provisions, forage, &c., and the transportation of the baggage of said company, but that the men of said company furnished and carried, themselves, their own provisions, forage, baggage, &c.; and that the team said to be hired of John Barkley was never employed for the use of said company; and that no forage was furnished by J. M. Sanders, as certified to by Captain James C. Boyd, in two accounts against the United States, receipts bearing date 14th June, 1837.

JEREMIAH S. WALKER.

GEORGE CHATFIELD, *J. P.*

COLUMBUS, GEORGIA, *29th June*, 1837.

A true copy: S. P. HEINTZELMAN,

Lt. 2d U. S. Inf'y.

Voucher 108—Abstract B.

The United States to John M. Sanders, DR.

1837.		
Mar. 29	For 166¼ bushels of corn, at $2 per bushel, is -	$332 50
	For 5,320 pounds of fodder, at 3 cts. per pound -	159 60
		$492 10

MONTGOMERY, *Alabama:*

I do certify that the above account, amounting to four hundred and ninety-two dollars and ten cents, is correct and just; and that the forage was actually purchased of said Sanders for the use of Captain Boyd's company of mounted Alabama volunteers, in the service of the United States for the suppression of Indian hostilities; and that it has been correctly and necessarily issued to the command.

MICHAEL CONNEL,
Q. M. of Capt'n Boyd's comp'y Ala. V. in ser. U. S.
JAMES C. BOYD,
Captain commanding.

Received, Columbus, Georgia, 14th June, 1837, of Lieutenant S. P. Heintzelman, assistant quartermaster United States army, the sum of four hundred and ninety-two dollars and ten cents, in full of the above account.

JOHN M. SANDERS.

Voucher 109—Abstract B.

The United States to Jno. Barkley, DR.

1837. For the service of one wagon and team, and driver, in hauling provisions and forage, &c., and in transporting the baggage of the troops operating against the Creek Indians, from the twenty-ninth of January to the tenth of June, 1837, being one hundred and thirty-three days, at $5 per day, - $665 00

I do certify that the above account is correct; that the wagon, team, and driver, were employed in the service of the United States during the period therein stated, and for the purposes therein mentioned; and that the services were necessary to enable the troops to operate against the Creek Indians.

MICHAEL CONNEL,
Q. M. of Capt'n Boyd's Comp'y Ala. V. in ser. U. S.
Approved: JAMES C. BOYD,
Captain commanding.

Received, Columbus, Georgia, 14th June, 1837, of Lieutenant S. P. Heintzelman, acting assistant quartermaster United States army, the sum of six hundred and sixty-five dollars, in full of the above account.

JOHN BARKLEY.

Voucher 110—Abstract B.

The United States to John M. Sanders, DR.

1837.	For 1,828¾ bushels corn, at $2, - -	$3,657 50
	For 58,520 lbs. fodder at $3, - -	1,755 60
		$5,413 10

MACON COUNTY, *Alabama:*

I do certify that the above account, amounting to five thousand four hundred and thirteen dollars and ten cents, is just and correct; and that the said forage was purchased of the said Sanders, for the use of Captain Boyd's company of mounted Alabama volunteers, in the United States service for the suppression of Indian hostilities; and that the forage has been justly and necessarily issued to the command.

MICHAEL CONNEL,
Q. M. of Captain Boyd's comp'y Ala. V. in ser. U. S.
JAMES C. BOYD,
Captain commanding.

Received, Columbus, Georgia, 14th June, 1837, of Lieutenant S. P. Heintzelman, acting assistant quartermaster United States army, the sum of five thousand four hundred and thirteen dollars and ten cents, in full of the above account.

JOHN M. SANDERS.

CUBAHACHA, *July* 8, 1837.

SIR: I have seen a copy of the accounts presented to you by Captain James C. Boyd and Lieutenant Sanders, who commanded a few volunteers in this neighborhood for a short time, during the Indian war. A great fraud has been practised on the Government. It is a fact that can be testified to by fifty or more respectable men, that Mr. Barkley had no wagon in the service, and that there never was any forage supplied by Mr. Sanders. I have Mr. Barkley's certificate that he never had any team in the service, and that he never authorized any person to draw or receipt for any money; and the quartermaster, Michael Connel, declares he never made out those forage accounts and certificates accompanying them. Many persons are returned as members of that company that did not belong to the company, and their pay drawn as members and withheld from them. These [facts] can be established, and this community wishes this fraud examined into and corrected.

You will excuse the liberty I take, as a stranger, with you. Judge Colquet, or Seaborn Jones, Esq., can inform you what reliance should be placed in my statement, and who I am.

Yours, respectfully,
LEONARD ABERCROMBIE.

P. S. Captain Boyd is obtaining certificates from some of the members of his company upon promises of reward.

L. A.

A true copy:

S. P. HEINTZELMAN,
Lieutenant, and acting assistant quartermaster..

COLUMBUS, GEORGIA, *August* 21, 1837.

SIR: I have the honor to enclose, herewith, a paper received from Captain James C. Boyd, in relation to some accounts I paid on his certificate, referred to in a letter addressed to your office, dated Columbus, Georgia, 12th July, 1837.

I have the honor to be, sir,
Very respectfully,
Your obedient servant,
S. P. HEINTZELMAN,
Lieutenant, and acting Assistant Quartermaster.

Major TRUEMAN CROSS,
Acting Q. M. Gen. U. S. army, Washington.

STATE OF ALABAMA, }
Macon county. }

JULY 6, 1837.

We, the undersigned, do affirm, upon a strict examination of all the facts and circumstances relative to Captain Boyd's course of conduct in having his company discharged, and paying them off and drawing the pay from Government officers, that he has acted honorably and with a strict regard to the interest of said company. We approve all he has done, being done with the knowledge and approbation of the company.

As regards turning over the amount of money drawn by names on the roll who never did any military duty, to others who did: that that would be the course, was known and approved of months previous to receiving the money. It is unjust any exceptions should be taken to Captain Boyd's using said names. It meets our entire approbation. As regards the affidavit of Jeremiah S. Walker, filed in your office, it is not true. Teams were employed in hauling forage, &c. for the use of company, and Captain Boyd has paid, or is responsible for, the amount of wages, forage, and provision.

Rations were distributed to company.

We do not hesitate to declare all opposition to Captain Boyd in this matter has grown out of the worst of feelings—malice, envy, jealousy, &c.; that Walker was influenced by others to take the unwarrantable course he has, which merits the utmost contempt of every worthy citizen.

In testimony of the above, we do hereunto affix our names as members of Captain Boyd's company.

John M. Sanders, 1st lt. P. C. R.	John McPhawl
Thomas Harris, 2d do.	Elijah Sedder
Samuel McNeil, 1st sergeant	Darlen Jones
John H. Cradock, 2d do.	Malcolm Gillis
John Brown, 3d do.	Stephen Nolen
Alexander Brown	Alexander Nolen
A. J. Durant	Robert Murphey
William Durant	Eleaz. W. Jones
Z. Green	John Wolf
John Heath, substitute	David Quarles
Daniel McGill, 2d corporal	Toliver Norris

Benjamin Simmons, 3d corporal	C. L. Motley
William Simmons	Gilbert Gilchrist
William Myrick	Robert Peques
James Myrick	M. Connel
Abram Myrick	C. Connel
William Reynolds	T. Connel
Alexander McDaniel	C. S. Reynolds.
John Gillis	

I do hereby certify Captain Boyd's conduct concerning this matter is correct, to the best of my knowledge.

JULY 12, 1837.

AUGUST 5, 1837.

ALABAMA, *Macon county:*

I do hereby certify the above is a correct copy of the original.

JOSEPH P. CLOUGH, *J. C. M. C.*

Decision of the Secretary of War on the case of Captain Boyd.

"Prompt measures ought to be taken to investigate the facts set forth in this report, and, if they prove correct, to bring the parties to this scandalous fraud to trial. A civil suit ought likewise to be brought against them to recover the money which they have obtained thus fraudulently. Let such a statement be made as will enable the Secretary to place the matter in the hands of the Solicitor of the Treasury, in order to the bringing of a civil suit, and an indictment be lodged against the parties for presenting false accounts.

"J. R. POINSETT."

AUGUST 24, 1837.

QUARTERMASTER GENERAL'S OFFICE,

Washington, August 25, 1837.

SIR: I availed myself of the first moment of time that could be spared from more pressing engagements, in reference to supplies for the next campaign in Florida, to lay your report of the 12th ultimo, together with its enclosures and the vouchers therein mentioned, before the Secretary of War. He has called for such a statement of the case as will enable him to place the subject in the hands of the Solicitor of the Treasury, with a view to a civil suit against Captain Boyd and his colleagues in the fraud, for the recovery of the money, and to an indictment against them for presenting false accounts. You will, therefore, take measures to collect additional testimony in the case, and report any further facts that may disclose themselves in the course of your investigations. Henceforth you will discredit the certificates of all the parties to this fraud, and pay no claim contracted by all or any one of them, or depending upon their testimony. If this company be still in service, you will notify Captain Boyd that he must make his requisitions on you for all supplies due to his command, and then you will furnish them in the usual way. I enclose you a printed copy of the act of Congress of 19th March, 1836, "to provide

for the payment of volunteers and militia corps in the service of the United States;" from which you will perceive, that where they furnish themselves with forage, (which they must do where there is no authorized agent to provide it,) they are entitled to a commutation of money, to be received through the Pay department.

The accounts in question, even if they had been contracted in good faith, were not accompanied by the collateral evidence which might reasonably have been required by you to warrant their payment. You should, at least, have had requisitions showing the number of horses, and the period for which they had been foraged.

As it is, there is nothing to show the proper application of the forage which you paid for, amounting to near six thousand dollars—whether it was fed to the company in a week or a month. You should not have paid for more than the regulated allowance; and this could only be ascertained by the number of horses, and the time they had been in service.

The expenditures at your station have greatly exceeded my calculations, and I think it time they had nearly ceased. You will not draw any further drafts for funds. Such as are necessary will be remitted on your estimates, which must be made sparingly. I am, myself, not aware of the necessity of keeping a volunteer force in service in your vicinity. It is presumed, however, to have been called out by competent authority.

I am, sir, very respectfully,

Your obedient servant,

T. CROSS,

Acting Quartermaster General.

Lt. S. P. HEINTZELMAN,

Acting Assistant Quartermaster, Columbus, Georgia.

COLUMBUS, GEORGIA,

September 14, 1837.

SIR: I have the honor to acknowledge the receipt of your letter dated 25th August, 1837, referring to some accounts presented by Captain J. C. Boyd, of the Alabama volunteers.

Since my former letter, I have seen several persons from the neighborhood where these transactions took place. They all assert that the accounts presented by Captain Boyd and his first lieutenant, J. M. Sanders, are fictitious, and that no such transactions took place.

They corroborate, in every particular, Walker's affidavit. Philip H. Raisford, postmaster at Cubahachee, Michael Connel, acting as quartermaster to the company, Nathan Crawford, Daniel Scurlock, L. Abercrombie, with many more in the same neighborhood, can testify to these facts.

Several suits will be commenced by individuals against Captain Boyd for forgery, in signing their names to a power of attorney, on which he drew their pay from the paymaster, as soon as the original power of attorney can be procured from Major Muhlenberg, the paymaster.

The statement furnished by Captain Boyd, and signed by some members of his company, which I have forwarded to your office, is of no weight, as such papers can easily be obtained in this country from the ignorant

and vicious. Swindling the Government is, by many, considered as no crime.

Captain Boyd furnished me requisitions showing the number of horses, and time for which forage was drawn. From these I made out a statement, and found that the accounts did not quite cover the requisitions. I could have had a formal requisition made out to cover the amount paid for, which the captain, I have no doubt, would have signed without any hesitation; but it would have been no check to the fraudulent transaction.

There has been a much larger volunteer force in this country, and for a much longer period, than I supposed necessary; but they were called out by proper authority, and have been mustered and paid.

It was necessary they should have supplies. If I had not furnished them, they would have procured them from other sources, and the Government, in the end, put to a much greater expense.

I have always furnished a much smaller quantity than their estimates called for, but always found that to be enough.

An officer of the army, of rank, with a few regular troops, I have no doubt, would, in a much shorter time, have picked up all stragglers, and prevented some outrages, with a great saving of expense.

There are, at present, but two companies of volunteers in service near the line of Alabama and West Florida, and from 100 to 150 miles from Irwinton, from whence they draw most of their forage.

I wished them to draw their supplies from the Gulf of Mexico, by means of the rivers traversing the district of country to which the Indians have fled, which would have saved a very difficult and expensive land carriage; but they objected on account of there being no roads.

Colonel Welborn, who has command, is sick; when he gets well, I understand he intends to scour the country below, pick up the last stragglers, and disband his forces.

I have the honor to be, sir, very respectfully, &c.

S. P. HEINTZELMAN,
Lt. and acting Assistant Quartermaster.

Major TRUEMAN CROSS,
Acting Q. M. Gen. U. S. A., Washington.

QUARTERMASTER GENERAL'S OFFICE,
Washington, October 7, 1837.

SIR: I enclose you, by the direction of the Secretary of War, the National Intelligencer of this date, containing a speech of Mr. Wise, of the House of Representatives, alleging a fraudulent transaction on the part of D. G. Skinner, quartermaster of the Alabama militia, with W. W. Crenshaw, clerk of the steamer Anna Calhoun. On a reference to your accounts, (supposing that you might have reimbursed the amount alleged to have been paid,) I do not find trace of any such transaction; and the only evidence on file of the agency of Skinner, is his receipt to Lieutenant Colonel Henry Stanton for one hundred dollars, placed in his hands, with the sanction of General Jesup, on the 23d September, 1836, for expenditure at Irwinton For this advance he has not rendered any account.

You will immediately institute a thorough investigation in the case, and report the result to this office as early as practicable.

I am, sir, very respectfully,
Your obedient servant,
T. CROSS,
Acting Quartermaster General.

To Lieut. S. P. HEINTZELMAN,
Acting Assist. Q. M., Columbus, Georgia.

COLUMBUS, GEORGIA,
November 3, 1837.

SIR: In obedience to your instructions in your letter of the 7th October, I have instituted a thorough investigation into Mr. Skinner's case.

Mr. Calhoun, one of the owners of the Anna Calhoun steamboat, has had the books of the boat thoroughly examined, but can find no trace of the transaction in the entries of freight carried, and no such name as A. Y. Smith occurs in the list of passengers carried by the boat.

In February, 1836, Mr. Skinner was a merchant in Irwinton, and had no connexion with the army until some months later. He assisted the militia commissary in May at Irwinton; and the latter part of June, or beginning of July, was appointed in General Irwin's staff as quartermaster.

In December last, he was mustered out of service by Lieutenant Peyton, and appointed agent to take charge of some Government supplies, until I could visit Irwinton and dispose of them. January, 1837, he was, by Captain Page, on the renewal of Creek hostilities, placed in his former situation; in which capacity he still acts.

On the 24th January, 1837, the steamboat Anna Calhoun left for Mount Vernon arsenal, Alabama, under contract for the United States, and has not been on the Chattahoochie since.

I have seen Mr. Skinner upon the subject, but can learn nothing from him.

Mr. Calhoun, who has warmly interested himself in the investigation, and in whose employ W. W. Crenshaw now is as clerk of the steamboat Muscogee, has sent for him, but he will not be here until the river rises, which may not be for two months from this time. This is the only opportunity I can see of throwing any light upon the subject.

When I saw Mr. Skinner, I suggested to him a plan to disprove the slander; but he does not appear to take much interest in the matter, or to be willing to follow my suggestion.

With Mr. Calhoun's assistance, I think I will be able to arrive at the truth on W. W. Crenshaw's arrival.

I have the honor to be, sir, very respectfully,
Your obedient servant,
S. P. HEINTZELMAN,
Lieutenant, and acting Assistant Quartermaster.

Major TRUEMAN CROSS,
Acting Quartermaster General U. S. A.
Washington City.

COLUMBUS, GEORGIA,
November 8, 1837.

SIR: I have the honor to enclose, herewith, an affidavit from W. W. Crenshaw, in explanation of the alleged fraud said to have been perpetrated by Skinner and himself.

Voucher 74, abstract B, second quarter, 1837, the account paid A. Y. Smith for transportation, will explain the affidavit.

I have the honor to be, sir,
Very respectfully,
Your obedient servant,
S. P. HEINTZELMAN,
Lieutenant, and acting Assistant Quartermaster.

Major TRUEMAN CROSS,
Acting Quartermaster General U. S. A., Washington.

MUSCOGEE COUNTY, *Georgia:*

Personally appeared before me, Michael N. Clarke, one of the justices of the peace in and for said county, W. W. Crenshaw, and being duly sworn, made oath as follows: That I was clerk on board the steamboat Hyperion, Captain J. Y. Smith, when she was chartered at Appalachicola by A. H. Falconer, United States agent, to transport some sick Georgia volunteers to Columbus, Georgia; and that the charter was eleven hundred dollars, of which amount one thousand was to go to the boat for the transportation, and one hundred to the said Falconer: one thousand being all Captain Smith asked for the transportation. That I had a conversation with A. Y. Smith, at Columbus, Georgia, on the subject of frauds against the United States, but that Skinner's name was not mentioned in connexion with the subject, nor any other name; and, further, that no such transaction ever took place on board the steamboat Anna Calhoun as that sworn to by A. Y. Smith, in an affidavit dated Wheeling, September 30, 1837, and published in the National Intelligencer, dated October 7, 1837.

W. W. CRENSHAW.
MICHAEL N. CLARKE, *J. P.*

COLUMBUS, GEORGIA, *November* 8, 1837.

HEADQUARTERS, ARMY OF THE SOUTH,
ORDER NO. 92. *Tampa Bay, (Fa.,) April* 24, 1837.

1. The sick of the Alabama and Georgia battalions of mounted volunteers, which have been designated by the inspector general as unfit for further service in the field during the present season, with the necessary number of attendants, will be moved immediately to their homes. The detachment of Alabamians will proceed, under charge of Lieutenant Padget, via New Orleans, the Mississippi and Tennessee rivers, to Belle-

fonte landing, on the latter river, where they will be debarked. The Georgia detachment will proceed, under charge of an officer, or some competent non-commissioned officer, to be designated by Captain Bishop, via the Appalachicola and Chattahoochie rivers, to Columbus, Georgia, where they will be debarked.

By order of Major General Jesup.

J. A. CHAMBERS,
Lt., A. D. C., and acting Adjutant General.

Know all men by these presents, that James Y. Smith, master and part owner of the steamer Hyperion, now being in this port, hath contracted with A. H. Falconer, agent for the United States at this place, to receive on board said steamer, and transport to Columbus, Surgeon John Maddin and sixty-four men, composing a detachment of Georgia volunteers, just arrived from Fort Brooke, in the schooner Henry Lee, Captain Norton; for which said James Y. Smith is to receive eleven hundred dollars, on delivery of the above persons, (as enumerated in this list now in possession of Sergeant Mays of said detachment,) to any United States quartermaster in Columbus, (say Lieutenant Heintzelman.)

It is understood that the men find their own provisons, and have all the necessary privileges of cooking and going to and fro on the deck; they being found in necessary wood and water.

In witness whereof, we have signed duplicates of this contract this 30th day of April, 1837, in Appalachicola.

JAMES Y. SMITH,
A. H. FALCONER.

Witness: JOHN MADDIN,
Surgeon to the M. G. V.

We hereby certify that the foregoing contract has been fulfilled by the captain, James Y. Smith, and owners of the said boat, and should be paid by the United States.

JOHN MADDIN,
Surgeon to the G. M. V.
B. R. MAYS, *Commanding.*

COLUMBUS, *May* 3, 1837.

No. 74—Abstract B, 2d quarter, 1837.

The United States to James Y. Smith, DR.

1837.	For hire of the steamer Hyperion, from Appalachicola, Florida, to Columbus, Georgia, transporting troops per contract with A. H. Falconer, agent for the United States, Appalachicola, Florida, dated April 30, 1837 -	$1,100 00

I certify that the above account is correct and just, and that the transportation was accomplished agreeably to contract.

Received, Columbus, Georgia, May 3, 1837, of Lieutenant S. P. Heintzelman, acting assistant quartermaster United States army, eleven hundred dollars, in full of the above account.

$1,100.

JAMES Y. SMITH.

COLUMBUS, GEORGIA, *November* 2, 1837.

SIR: I have the honor to enclose, herewith, J. M. Morrison's account for rent of house for hospital, and for mattresses for wounded Alabama volunteers, at Irwinton, Alabama, for your decision.

Mr. Skinner has presented near $3,000 worth of accounts for forage for the Barbour county rangers. It is all for fodder. At the time it is said to have been purchased, I do not believe so much could have been obtained in the country.

Some of these accounts seem to be similar to those I paid Captain Boyd's, and declined paying Captain Brodnax's companies. Mr. Skinner does not know that it was purchased. He authorized the companies to purchase when they could find, and has certified the accounts to the amount of their requisitions. The plan pursued, was for an officer or some member of the company who had funds, to purchase all the fodder they met with, and introduce it in one account, at some fixed price.

The impression among the volunteers appears to be, that if the Government does not furnish all the supplies they are entitled to, they can make out fictitious accounts for the balance, and divide the amount among the members.

My object for making this statement, is to inquire whether I shall pay these accounts in their present form, and, if not, what evidence I shall require from the claimants to prove that it has not been a fictitious transaction.

The forage accounts of two more companies remain unpaid, besides these.

I have the honor to be, sir, very respectfully,

Your obedient servant,

S. P. HEINTZELMAN,

Lieut., and acting Assist. Quartermaster.

Major TRUEMAN CROSS,

Acting Quartermaster Gen., Washington city.

QUARTERMASTER GENERAL'S OFFICE,

Washington, November 29, 1837.

SIR: After the recent developments of frauds upon the public, in your vicinity, it is no longer safe, either for yourself or the public interest, to continue the payment of claims purporting to have been con-

tracted by civil agents and officers of militia or volunteers, and certified by them. You will, therefore, confine your payments hereafter to claims contracted by yourself, or coming so fully under your observation as to enable you to testify to their entire correctness.

You have erred very much in adopting the vouchers of D. G. Skinner, who calls himself quartermaster general of Alabama volunteers, into your accounts, and thus giving them the appearance of being your own transactions. In the present state of the papers, it would seem that you had paid the money directly to the claimants themselves, when, in fact, as I infer from your reports, it was paid over by you to Mr. Skinner as a reimbursement of the amount purporting to have been expended by him. Under these circumstances, you will perceive there is no certainty that the money will ever reach the claimants, even where the accounts are founded upon *bona fide* transactions connected with the public service; but of this, after what we have seen, there can be no assurance whatever.

You will immediately discharge A. H. Falconer from service, as an agent of the United States at Appalachicola, and all other civil agents who may be in employ in your vicinity. It is not known here by whom Mr. Falconer was constituted a public agent, nor has he ever been recognised as such by this office, or at the War Department. The same may be said of Mr. Skinner's agency, before he came into service as quartermaster of Alabama volunteers.

I am, sir, respectfully,
Your obedient servant,
T. CROSS,
Acting Quartermaster Gen.

Lieut. S. P. HEINTZELMAN,
Acting Assist. Quartermaster, St. Augustine, Florida.

No. 9.

REPORT OF THE COMMISSARY GENERAL OF SUBSISTENCE.

OFFICE OF THE COMMISSARY GENERAL OF SUBSISTENCE,
Washington, November 20, 1837.

SIR: In conformity with your instructions of 7th September and 21st ultimo, I have the honor to present to your view a statement of moneys remitted and charged to contractors and disbursing officers of this department during the first, second, and third quarters of the year, together with the balances in their possession 31st December, 1836, amounting to - - - - - - $1,002,553 95

To which are to be added the balances due the latter on the settlement of their accounts - - - 116,287 58

Aggregating - - - - - - 1,118,841 53

Accounted for during the same period - - 955,372 07

Leaving - - - - - - 163,469 46

From which is to be deducted—

This sum, charged to contractors as the difference in price of stores purchased to supply deficiencies arising from failures -	$922 77	
Remittances made to disbursing officers late in the 3d, for the 4th quarter of the year -	52,800 00	
This sum, being in possession of officers who have ceased to disburse, and who have been ordered to deposite it in banks, to the credit of the Treasurer of the United States -	28,363 68	
This sum, expended in the removal and subsistence of emigrating Indians, and credited on that account, and to be refunded from that appropriation - - - -	5,000 00	
		87,086 45

Leaving the sum of - - - - - $76,383 01

actually in possession of the disbursing officers of the department, applicable to the expenditures of the 4th quarter of the year.

Of one hundred and forty officers disbursing the public moneys, under the control of the Commissary General of Subsistence, during the period above embraced, the accounts of seventeen were not received at the completion of this statement; five have been received since, leaving only twelve whose accounts are not now furnished; but there is no doubt they will reach the office in a few days. These officers have been actively engaged in the operations preparatory to the Florida campaign the approaching winter, and their accounts could not be settled and forwarded with that punctuality and promptitude displayed by

them on ordinary service; but it is confidently believed that, if received, they would be productive of but little difference in the result of the statement.

The balance to the credit of the appropriation for subsistence on the 31st of December, 1836, was -		$275,255 05
Appropriated for 1837 - - - -		913,445 00
Refunded in 1837 - - - - -		18,191 49
Total applicable to the service of the year - -		1,206,891 54
The requests drawn for remittances amount to -		696,008 16
Leaving to the credit of the appropriation on the 30th of September, inclusive - - - -		510,883 38
Total amount applicable to the service of the department during the year, as above - - -		1,206,891 54
Amount expended, per statement - - -		955,372 07
Which, if it had been drawn from the Treasury, would have left no more than - - - -		251,519 47
But to this sum is to be added—		
Balances in the hands of assistant commissaries on 31st December, 1836 -	$135,589 26	
Balances due to assistant commissaries on 30th September, 1837 -	116,287 58	
And this sum, being on account of sales to officers and citizens on the frontier posts - - - -	7,487 07	
		259,363 91
Making the above balance - -		$510,883 38

The balances due to the disbursing officers on the settlement of their accounts, arise principally from bills of exchange drawn by them, and credited in the third, although not paid until after the commencement of the fourth quarter.

The operations of the department have been carried on upon a scale much more extensive than at any former period; provisions have been supplied with the earliest despatch from every quarter whence purchased, and to every point required; the comfort and health of the troops have been carefully considered; in lieu of the customary ration, in Florida, low-priced French and Catalonia wines have been issued during the summer; and onions, potatoes, and other vegetables of an antiscorbutic nature, have been occasionally substituted for beans: and the assistant commissaries have received instructions to provide such change of diet and to add such condiments as might be required to prevent the appearance and to aid in the cure of disease; and every suggestion made by officers in the field to ameliorate the condition of the soldier has been cheerfully and promptly complied with; and it affords me very great pleasure to add, that the reports of various officers bear ample testimony to the most beneficial results from the course pursued.

Very respectfully, your most obedient servant,

GEO. GIBSON,
Commissary General of Subsistence.

Hon. J. R. POINSETT, *Secretary of War.*

Statement exhibiting the moneys remitted to contractors from the 1st of account of failures, and the amount accounted for by them; the balances cember, 1836; the remittances to them in the 1st, 2d, and 3d quarters sales to officers and citizens on the frontier posts; sales of surplus them, during the same period; together with the residence of the con the expiration of the 3d quarter of the year.

NAMES, RESIDENCE, AND STATIONS.			Balances on hand 31st December, 1836.	Remitted.	Charged on account of failures.
Dan'l Bradford,	contractor,	Georgetown, Ky.	-	$13,081 25	-
Samuel and I. Bell,	do	Louisville, do	-	4,385 03	-
Bruce and Baldwin,	do	Green Bay, W. T.	-	16,626 60	
H. and D. Cotheal,	do	New York, -	-	1,569 50	-
John S. Finley,	do	Georgetown, Ky.	-	23,364 56	-
Hempstead and Beebe,	do	St. Louis, Missouri	-	25,877 16	-
Hill and McGunnegle,	do	Do do	-	6,484 21	-
McGunnegle and Way,	do	Do do	-	6,690 54	-
Charles Moody,	do	Portland, Me.	-	34 45	-
O. Newberry,	do	Detroit, M. T.	-	3,684 24	-
Newberry and Gondell,	do	Do do	-	10,589 49	-
Peebles and Stewart,	do	Pittsburg, Pa.	-	15,969 10	$40 00
V. Sanchez,	do	St. Augustine, Fa.	-	2,342 42	-
J. L. Sanford	do	Baltimore, Md.	-	489 22	-
Joseph Sayer	do	Newport, R. I.	-	33 75	-
William Stewart,	do	Pittsburg, Pa.	-	9,650 91	-
Joseph Smith,	do	Cincinnati, Ohio	-	8,110 86	-
Francis J. Smith,	do	Richmond, Va.	-	1,384 15	-
Turnham and Arthur,	do	Liberty, Missouri	-	105 44	-
G. B. Wilson & Co.	do	Baltimore, Md.	-	35,087 65	882 77
Asa Ames,	special do	Boston, Mass.	-	1,025 00	-
J. H. Brewster,	do do	Wilmington, N. C.	-	224 40	-
H. Campbell,	do	Rochester, N. Y.	-	63 09	-
Cassidy & McGuigan,	do	Albany, do	-	813 97	-
S. Comstock,	do	Utica, do	-	700 46	-
Samuel Coolidge,	do	St. Louis, Mo.	-	87 78	-
T. B. Curtis,	do	Wheeling, Va.	-	111 60	-
B. Dana,	do	Watertown, Mass.	-	985 43	-
J. W. Davis, jr. & Co.	do	Newport, R. I.	-	46 17	-
N. Eggleston,	do	Hartford, Ct.	-	1,337 06	-
Patrick Foster,	do	Vergennes, Vt.	-	248 84	-
James Graham,	do	Dearbonville, M. T.	-	365 47	-
John K. Graham,	do	Philadelphia, Pa.	-	1,373 29	-
L. Howard & Co.	do	Charlestown, Ind.	-	873 74	-
Johnston and McKay,	do	Front Royal, Va.	-	118 12	-
John Kerney,	do	Pittsburg, Pa.	-	539 03	-
R. H. Lee,	do	Buffalo, N. Y.	-	1,465 93	-
Samuel Moulson,	do	Rochester, do	-	834 73	-
Mudge and Doty,	do	Rome, do	-	513 03	-
Luther Parks & Co.	do	Louisville, Ky.	-	389 29	-
L. O. Phinney,	do	Syracuse, N. Y.	-	1,571 10	-
John Price,	do	Winchester, Va.	-	16 00	-
S. Pendleton,	do	New Haven, Ct.	-	2,541 50	-

January to the 30th of September, 1837; the sums charged to them on in the hands of the disbursing officers of the department on the 31st of De- of 1837; the sums charged to them as transfers from one office to another; provisions, empty boxes, barrels, &c., and the amounts accounted for by tractors, the station of the officers, and the balances in their possession at

Transfers, sales, &c.	Total charged.	Accounted for.	Balances due to assistant commissaries of subsistence 30th of September, 1837.	Balances due by assistant commissaries of subsistence 30th of September, 1837.	REMARKS.
-	$13,081 25	$13,081 25			
-	4,385 03	4,385 03			
-	16,626 60	16,626 60			
-	1,569 50	1,569 50			
-	23,364 56	23,364 56			
-	25,877 16	25,877 16			
-	6,484 21	6,484 21			
-	6,690 54	6,690 54			
-	34 45	34 45			
-	3,684 24	3,684 24			
-	10,589 49	10,589 49			
-	16,009 10	16,009 10			
-	2,342 42	2,342 42			
-	489 22	489 22			
-	33 75	33 75			
-	9,650 91	9,650 91			
-	8,110 86	8,110 86			
-	1,384 15	1,384 15			
-	105 44	105 44			
-	35,970 42	35,087 65	-	$882 77	To be deducted from their December delivery.
-	1,025 00	1,025 00			
-	224 40	224 40			
-	63 09	63 09			
-	813 97	813 97			
-	700 46	700 46			
-	87 78	87 78			
-	111 60	111 60			
-	985 43	985 43			
-	46 17	46 17			
-	1,337 06	1,337 06			
-	248 84	248 84			
-	365 47	365 47			
-	1,373 29	1,373 29			
-	873 74	873 74			
-	118 12	118 12			
-	539 03	539 03			
-	1,465 93	1,465 93			
-	834 73	834 73			
-	513 03	513 03			
-	389 29	389 29			
-	1,571 10	1,571 10			
-	16 00	16 00			
-	2,541 50	2,541 50			

STATEMENT

NAMES, RESIDENCE, AND STATIONS.			Balances on hand 31st December, 1836.	Remitted.	Charged on account of failures.
W. K. Potter,	contractor,	Providence, R. I. -	-	410 00	-
Sable Rogers,	do	Springfield, Mass. -	-	11 40	-
H. and D. C. Steiner,	do	Frederick, Md. -	-	175 86	-
W. H. Tredway,	do	Schenectady, N. Y. -	-	613 06	-
O. P. Tillinghast,	do	Fayetteville, N. C. -	-	240 68	-
W. N. Thompson,	do	Martinsburg, Va. -	-	143 75	-
Calvin Whiting,	do	Portland, Maine -	-	97 24	-
Lt. R. H. Archer,	a. c. s.	Fort Brooke, Fa. -	-	-	-
Lt. T. B. Arden,	do	Nacogdoches, Tex. -	1,079 21	-	-
Lt. E. B. Babbitt,	do	Fort Towson, Ark. -	126 05	-	-
Lt. W. H. Betts,	do	Augusta, Ga. -	4 12	800 00	-
Lt. A. G. Blanchard,	do	Camp Sabine, La. -	-	-	-
Lt. J. S. Brunsford,	do	Fort Mellon, Fa. -	-	-	-
Capt. E. K. Barnum,	act'g do	Baltimore, Md. -	282 72	9,600 00	-
Capt. H. Brown,	do do	St. Augustine, Fa. -	-	1,000 00	-
Capt. George Boyd,	do do	Fort Armstrong, do -	-	-	-
Lt. E. D. Bullock,	do	Jefferson barr'ks, Mo.	-	-	-
Lt. J. H. K. Burgwin,	do	Des Moines, Ill. -	365 93	-	-
Lt. M. J. Burke,	do	Fort Foster, Fa. -	-	-	-
Lt. Martin Burke,	do	Mount Vernon, Ala.	-	-	-
Lt. J. R. D. Burnett,	do	Fort Brady, M. T. -	-	1,000 00	-
Capt. J. R. Butler,	act'g do	Pittsburg, Pa. -	159 38	1,100 00	-
Lt. T. S. Bryant,	do do	Fredericksburg, Va.	293 70	700 00	-
Sutl'r T. M. Chandler,	do do	Augusta, Ga. -	14 59	350 00	-
Lt. R. E. Clary,	do	Fort Howard, M. T.	-	-	-
Lt. L. F. Carter,	do	Fort Gibson, Ark. -	4,255 35	-	-
Col. J. B. Crane,	acting do	Fort Trumbull, Con.	-	300 00	-
Lt. John C. Casey,	do	Tampa, Fa. -	1,858 94	5,000 00	-
Lt. Silas Casey	do	Lowndes, Ga. -	37 59	-	-
Capt. T. Childs,	acting do	Fort Sullivan, Me. -	115 30	-	-
Lt. B. Conklin,	do	Florida -	-	-	-
Lt. C. O. Collins,	do	Savannah, Ga. -	2 00	-	-
Sergeant A. Cox,	acting do	New Echota, Ga. -	-	-	-
Major G. Dearborn,	do do	Lowndes, do -	-	-	-
Lt. J. Donaldson,	do	Frederick, Md. -	-	100 00	-
Lt. J. Duncan,	do	Fort Trumbull, Ct. -	88 16	150 00	-
Lt. S. H. Drum,	do	St. Augustine, Fa. -	68 04	6,000 00	-
Lt. A. B. Eaton,	do	Fort Gratiot, M. T. -	788 17	500 00	-
Maj. J. Erving,	acting do	Beaufort, N. C. -	-	400 00	-
Lt. G. P. Field,	do	Erie, Pa. -	-	100 00	-
Capt. L. Ford,	acting do	Charlestown, Ind. -	-	100 00	-
Capt. W. M. Fulton,	do do	Richmond, Va. -	62 77	900 00	-
Maj. J. Garland,	do do	Detroit, M. T. -	-	100 00	-
Bt. Capt. C. Graham,	do	Pittsburg, Pa. -	-	1,150 00	-

—Continued.

Transfers, sales, &c.	Total charged.	Accounted for.	Balances due to assistant commissaries of subsistence 30th of September, 1837.	Balances due by assistant commissaries of subsistence 30th of September, 1837.	REMARKS.
-	410 00	410 00			
-	11 40	11 40			
-	175 86	175 86			
-	613 06	613 06			
-	240 68	240 68			
-	143 75	143 75			
-	97 24	97 24			
568 69	568 69	571 52	2 83	-	Due him on settlement.
39 48	1,118 69	1,178 46	59 77	-	Do do.
2,310 95	2,437 00	2,437 00	-	-	Closed.
-	804 12	626 07	-	178 05	Disbursing.
1,000 00	1,000 00	-	-	1,000 00	Do for 4th qr. of year.
54 75	54 75	54 75	-	-	Closed.
-	9,882 72	9,882 72	-	-	Do.
-	1,000 00	1,000 00	-	-	Do.
1,985 47	1,985 47	1,985 47	-	-	Do.
1,070 61	1,070 61	27 85	-	1,042 76	Disbursing.
-	365 93	8 75	-	357 18	Do. acct. 3d qr. not rec'd.
231 22	231 22	231 22	-	-	Closed.
331 50	331 50	15 89	-	315 61	Disbursing.
769 29	1,769 29	1,769 29	-	-	Closed.
364 13	1,623 51	1,469 19	-	154 32	Disbursing.
-	993 70	950 65	-	43 05	Due U. S. on settlement.
29 90	394 49	394 49	-	-	Closed.
2,822 40	2,822 40	154 92	-	2,667 48	Disbursing.
517 23	4,722 58	4,186 81	-	585 77	Dead; amount secured.
1 50	301 50	301 50	-	-	Closed.
1,935 96	8,794 90	3,408 13	-	5,386 77	Disbursing; account 3d quarter not received.
-	37 59	2,574 67	2,537 08	-	Due him on account of quartermaster's funds.
-	115 30	60 59	-	54 71	Due U. S. on settlement.
5 24	5 24	5 24	-	-	Closed.
153 03	155 03	153 03	-	2 00	Due U. S. on settlement.
1,000 00	1,000 00	602 92	-	397 08	Disbursing.
-	-	265 75	265 75	-	Due him on settlement.
20 00	120 00	48 00	-	72 00	Disbursing.
214 28	452 44	411 97	-	40 47	Disbursing.
1,782 68	7,850 72	4,586 56	-	3,264 16	Do. acct. 3d quarter not rec'd; $3,000 remitted late in 3d for 4th qr.
3,429 50	4,717 67	2,181 91	-	2,535 76	Disbursing.
-	400 00	400 00	-	-	Closed.
-	100 00	24 03	-	75 97	Disbursing.
-	100 00	-	-	100 00	Account not received.
-	962 77	-	-	962 77	Do do.
-	100 00	-	-	100 00	Do do.
145 64	1,295 64	1,295 64	-	-	Closed.

STATEMENT

NAMES, RESIDENCE, AND STATIONS.	Balances on hand 31st December, 1836.	Remitted.	Charged on account of failures.
Lt. J. B. Grayson, a. c. s. New Orleans, La. -	13,458 54	95,000 00	-
Bt. Capt. Timo. Green, do Fort Monroe, Va. -	1,348 66	23,500 00	-
Lt. W. N. Grier, do Camp Benton, Mo. -	504 35	-	-
Lt. W. Gilpin, do New Orleans, La. -	-	-	-
Capt. E. Harding, acting do Mount Vernon, Ala.	5,701 06	15,000 00	-
Lt. W. S. Henry, do Camp Sabine, La. -	71 58	-	-
Lt. J. M. Hill, do Hancock bar'ks, Me.	615 29	-	-
Estate Capt. R. Holmes, do St. Louis, Mo. -	15,142 29	714 25	-
Lt. William Hoffman, do Fort Dade, Fa. -	647 06	-	-
Lt. C. S. Hoskins, do New Echota, Ga. -	-	-	-
Lt. C. S. Howe, do Calhoun, Tenn. -	7,484 49	-	-
Lt. M. S. Howe, do Florida -	-	-	-
Lt. A. A. Humphreys, do Do -	3 35	-	-
Maj. T. F. Hunt, acting do Savannah, Ga. -	-	45,000 00	-
Lt. F. E. Hunt, do Micanopy, Fa. -	-	-	-
Capt. G. C. Hutter, act'g do Florida -	-	-	-
Capt. L. T. Jamison, do do Chicago, Ill. -	469 74	-	-
Lt. J. R. B. Gardenier, do Trenton, N. J. -	49 25	200 00	-
Sergt. T. Johnson, do Florida -	-	-	-
Lt. J. F. Kennedy, do St. Augustine, Fa. -	164 00	2,000 00	-
Lt. W. S. Ketchum, do Jefferson barr'ks, Mo.	239 81	-	-
Lt. E. Kibby, do Mount Vernon, Alab.	1,266 28	-	-
Lt. J. W. Kingsbury, do St. Louis, Mo. -	11,591 77	27,000 00	-
Lt. E. M. Lacy, do Ft. Winnebago, W. T.	550 08	600 00	-
C. H. Larned, do Newark, N. J. -	-	100 00	-
Maj. W. W. Lear, act'g do Baton Rouge, La. -	-	700 00	-
Lt. R. B. Lawton, do New York -	-	-	-
Lt. J. L'Engle, do Charleston, S. C. -	3,635 24	25,571 49	-
Lt. G. F. Lindsay, do Florida -	-	-	-
Lt. E. R. Long, do Newport, Ky. -	-	2,900 00	-
Lt. R. A. Luther, do Fort Mitchell, Ala. -	-	-	-
Lt. N. C. Macrae, do Fort Jesup, La. -	4,307 76	-	-
Maj. Æneas Mackay, act. do Philadelphia -	-	3,174 87	-

—Continued.

Transfers, sales, &c.	Total charged.	Accounted for.	Balances due to assistant commissaries of subsistence 30th of September, 1837.	Balances due by assistant commissaries of subsistence 30th of September, 1837.	REMARKS.
2,016 04	110,474 58	222,669 29	112,194 71	-	Disbursing. This balance due him arises from drafts credited in his acct. for the 3d, and not paid until the 4th qr.
5,873 87	30,722 53	22,913 87	-	7,808 66	Disbursing; $5,000 remitted late in 3d for 4th quarter.
-	504 35	504 35	-	-	Closed.
100 00	100 00	29 55	-	70 45	Disbursing.
-	20,701 06	14,815 31	-	5,885 75	Ordered to deposite to the credit of the Treasurer of the United States.
14 00	85 58	85 58	-	-	Closed.
211 98	827 27	827 27	-	-	Do.
-	15,856 54	15,856 54	-	-	Do.
161 73	808 79	807 29	-	1 50	Due U. S. on settlement.
9,529 79	9,529 79	9,461 47	-	68 32	Disbursing.
36,268 57	43,753 05	42,901 01	-	853 04	Do.
792 61	792 61	688 01	-	104 60	Do.
-	3 35	3 35	-	-	Closed.
3,499 06	48,499 06	36,332 74	-	12,166 32	Disbursing; account 3d quarter not received.
419 31	419 31	625 06	205 75	-	Disbursing.
-	-	129 90	129 90	-	Due him on settlement.
2,491 29	2,961 03	859 01	-	2,102 02	Disbursing.
-	249 25	247 87	-	1 38	Do.
597 21	597 21	597 21	-	-	Closed.
25 62	2,189 62	2,189 62	-	-	Do.
347 19	587 00	587 00	-	-	Do.
3,657 77	4,924 05	1,538 94	-	3,385 11	Disbursing.
2,207 15	40,798 92	22,953 43	-	17,845 49	Do.; $16,000 remitted late in 3d for 4th qr.
-	1,150 08	-	-	1,150 08	Do.; account 3d quarter not received.
-	100 00	-	-	100 00	Do.; $100 remitted late in 3d quarter.
-	700 00	597 70	-	102 30	Disbursing.
13 48	13 48	-	-	13 48	Ordered to pay over.
-	29,206 73	24,813 90	-	4,392 83	Disbursing; $5,000 remitted late in 3d for 4th quarter.
1,313 82	1,313 82	1,312 81	-	1 01	Due U. S. on settlement.
-	2,900 00	2,642 32	-	257 68	Disbursing.
17,026 89	17,026 89	10,172 42	-	6,854 47	Do.
3,602 58	7,910 34	4,294 58	-	3,615 76	Do.
-	3,174 87	1,174 87	-	2,000 00	Do.; $2,000 remitted late in 3d for 4th quarter.

STATEMENT

NAMES, RESIDENCE, AND STATIONS.			Balances on hand 31st December, 1836.	Remitted.	Charged on account of failures.
Lt. J. W. McCrabb,	a. c. s.	Boston, Mass -	2,475 37	-	-
Lt. J. B. Magruder,	do	Ft. Washington, Md.	157 36	-	-
Lt. G. W. McLean,	do	Florida -	6,269 20	-	-
Capt. B. Macomber, act.	do	Do -	-	-	-
Lt. J. W. McClure,	do	Fort Snelling, Miss.	1,826 60	-	-
Lt. H. McKavett,	do	Fort Coffee, Ark. -	549 02	-	-
Lt. W. Maynadier,	do	Pikesville, Md. -	-	100 00	-
Lt. Z. P. Maury,	do	Carlisle, Pa. -	-	-	-
Lt. M. E. Merrill,	do	Green Bay, W. T. -	464 23	800 00	-
Lt. J. H. Miller,	do	Montgomery, Ala. -	1,882 31	5,000 00	-
Sutler P. Milliken, act'g	do	Eastport, Me. -	42 30	200 00	-
Capt. D. S. Miles,	do do	Baltimore, Md. -	-	16,800 00	-
Capt. A. Mordecai,	do do	Frankford, Pa. -	20 52	1,300 00	-
Capt. C. S. Merchant,	do do	Picolata, Fa. -	-	-	-
Lt. A. Montgomery,	do	Cherokee nation -	-	-	-
Lt. Gouverneur Morris,	do	Florida -	2,127 16	-	-
Capt. W. W. Morris, act.	do	Fort Brooke, Fa. -	-	-	-
Mr. J. C. Noyes,	do do.	Eastport, Me. -	64 81	125 00	-
Capt. John Page, Indian ag't		Fort Mitchell, Ala. -	-	-	-
Lt. M. R. Patrick,	a. c. s.	Mackinac, M. T. -	69 91	1,000 00	-
Lt. J. W. Penrose,	do	Hancock bar'ks, Me.	7,962 80	-	-
Lt. Henry Prince,	do	Key West, Fa. -	-	-	-
Capt. G. D. Ramsay,	do	Washington, D. C. -	-	700 00	-
Lt. J. R. V. D. Reeve,	do	Florida -	-	-	-
Capt. J. W. Ripley, act.	do	Augusta, Me. -	19 50	100 00	-
Lt. B. S. Roberts,	do	Des Moines, Ill. -	1,300 08	-	-
Lt. R. H. Ross,	do	Fort Gibson, Ark. -	1,752 14	11,100 00	-
Capt. S. L. Russell	do do	Hancock barracks -	-	-	-
Capt. W. C. Sanders,	do do	Florida -	11,924 81	-	-
Dr. J. H. Sargent,	do	Portsmouth, N. H. -	66 30	-	-
Maj. H. Saunders,	do do	Ft. Washington, Md.	211 07	-	-
Lt. F. Searle,	do	Florida -	52 65	-	-
Lt. T. W. Sherman,	do	Do -	-	-	-
Lt. R. C. Smead,	do	Do -	-	-	-
Lt. A. E. Shiras,	do	New York -	5,045 19	98,000 00	-
Lt. W. W. Setliffe,	do	Florida -	13 15	-	-
Lt. J. R. Smith,	do	Sackett's Har. N. Y.	23 33	650 00	-
Lt. J. H. Simpson,	do	Florida -	703 56	-	-

—Continued.

Transfers, sales, &c.	Total charged.	Accounted for.	Balances due to assistant commissaries of subsistence 30th of September, 1837.	Balances due by assistant commissaries of subsistence 30th of September, 1837.	REMARKS.
147 13	2,622 50	27 25	-	2,595 25	Disbursing; account 3d quarter not received; ordered to deposite to credit of Treasurer of U. S.
-	157 36	157 36	-	-	Closed.
-	6,269 20	6,269 20	-	-	Do.
166 37	166 37	162 32	-	4 05	Due U. S. on settlement.
1,172 29	2,998 89	2,998 89	-	-	Closed.
516 23	1,065 25	415 32	-	649 93	Disbursing; account 3d quarter not received.
181 69	281 69	225 49	-	56 20	Do do do.
93 22	93 22	-	-	93 22	Ordered to pay over.
7,291 99	8,556 22	8,556 22	-	-	Closed.
624 89	7,507 20	7,507 20	-	-	Do.
4 20	246 50	188 95	-	57 55	Disbursing.
517 30	17,317 30	17,317 30	-	-	Closed.
-	1,320 52	1,310 60	-	9 92	Disbursing.
673 73	673 73	159 49	-	514 24	Do.
2,637 18	2,637 18	2,335 64	-	301 54	Do.
-	2,127 16	2,127 16	-	-	Closed.
508 45	508 45	508 45	-	-	Do.
-	189 81	179 88	-	9 93	Disbursing.
5,000 00	5,000 00	-	-	5,000 00	Credited in accounts for removing and subsisting Indians.
4,393 49	5,463 40	4,831 54	-	631 86	Disbursing.
1,471 30	9,434 10	7,324 56	-	2,109 54	Do.
10 88	10 88	10 88	-	-	Closed.
-	700 00	-	-	700 00	Remitted late in 3d for 4th quarter.
871 43	871 43	828 50	-	42 93	Disbursing.
8 00	127 50	180 26	52 76	-	Do.
408 18	1,708 26	639 22	-	1,069 04	Do.
3,710 57	16,562 71	7,989 94	-	8,572 77	Do. account 3d quarter not received. $5,000 remitted late in 3d for 4th quarter.
266 54	266 54	208 97	-	57 57	Due U. S. on settlement.
-	11,924 81	11,924 81	-	-	Closed.
-	66 30	85 58	19 28	-	Due him on settlement.
-	211 07	169 38	-	41 69	Disbursing.
1,010 15	1,062 80	1,062 80	-	-	Closed.
552 98	552 98	1,098 81	545 83	-	Disbursing.
134 53	134 53	134 53	-	-	Closed.
154 60	103,199 79	83,449 98	-	19,749 81	Disbursing. $15,000 remitted late in 3d for 4th quarter.
31 37	44 52	14 66	-	29 86	Disbursing.
3 70	677 03	605 03	-	72 00	Do.
407 87	1,111 43	703 56	-	407 87	Do.

STATEMENT

NAMES, RESIDENCE, AND STATIONS.			Balances on hand 31st December, 1836.	Remitted.	Charged on account of failures.
Lt. E. Schriver, actg. a. c. s.		Washington city -	-	100 00	-
Lt. H. Swartwout,	do	West Point, N. Y. -	85 90	-	-
Lt. J. H. Stokes,	do	Florida -	128 78	-	-
Lt. R. G. Stockton,	do	Do -	-	-	-
Lt. J. B. Scott,	do	Washington city -	330 73	1,800 00	-
Capt. J. Symington,	do do	St. Louis, Mo. -	66 16	100 00	-
Capt. J. P. Taylor,	com'y,	Louisville, Ky. -	1,304 81	23,000 00	-
Lt. F. Taylor,	a. c. s.	Baltimore, Md. -	-	6,000 00	-
Lt. R. E. Temple,	do	Watervliet, N. Y. -	61 83	1,725 00	-
Lt. B. A. Terrett,	do	Ft. Leavenworth, Mo.	274 68	-	-
Lt. P. R. Thompson,	do	Do -	-	-	-
Lt. W. A. Thornton,	do	Watervliet, N. Y. -	-	600 00	-
Lt. D. H. Tufts,	do	Florida - -	-	-	-
Doct. W. Turner, acting	do	Newport, R. I. -	-	200 00	-
Lt. J. S. Van Derveer,	do	Boston, Mass. -	1 32	300 00	-
Lt. R. D. A. Wade,	do	Newport, R. I. -	12 16	300 00	-
Capt. C. A. Waite, act'g	do	Boston, Mass. -	-	500 00	-
Col. J. B. Walbach, do.	do	Annapolis, Md. -	7 02	100 00	-
Lt. A. B. Walbach,	do	Florida - -	-	-	-
Lt. W. Wall,	do	Do - -	-	-	-
Lt. J. L. C. Watkins,	do	Do - -	115 77	-	-
Lt. G. Watson,	do	Do - -	526 37	-	-
Lt. G. E. Weaver,	do	Do - -	-	-	-
Lt. H. W. Wessells,	do	Fort Gratiot, M. T. -	-	-	-
Capt. Otis Wheeler, act.	do	Fort Jesup, La. -	50 00	-	-
Lt. J. H. Winder,	do	Florida - -	55	1,000 00	-
Capt. E. S. Winder, act.	do	Baltimore, Md. -	-	-	-
Capt. Geo. Wright, act.	do	Harrisburg, Pa. -	-	100 00	-
Lt. George Wilson,	do	Fort Crawford -	1,401 97	-	-
Lt. R. H. Whiteley,	do	Augusta, Ga. -	-	-	-
Maj. H. Whiting, act'g	do	Detroit, M. T. -	22 17	-	-
Gen. John E. Wool, act'g	do	Athens, Ten. -	9,323 05	50,000 00	-
		Dollars	135,589 26	696,008 16	922 77

—Continued.

Transfers, sales, &c.	Total charged.	Accounted for.	Balances due to assistant commissaries of subsistence 30th of September, 1837.	Balances due by assistant commissaries of subsistence 30th of September, 1837.	REMARKS.
-	100 00	25 60	-	74 40	Disbursing.
45 03	130 93	57 08	-	73 85	Do.
46 76	175 54	3 30	-	172 24	Do.; account 3d quarter not received.
100 00	100 00	100 00	-	-	Closed.
178 21	2,308 94	2,308 94	-	-	Do.
138 25	304 41	198 72	-	105 69	Disbursing.
-	24,304 81	23,687 00	-	617 81	Do.
848 31	6,848 31	6,184 39	-	663 92	Do.
-	1,786 83	1,786 83	-	-	Closed.
1,786 05	2,060 73	1,788 98	-	271 75	Disbursing; account 3d quarter not received.
250 00	250 00	250 00	-	-	Closed.
-	600 00	565 18	-	34 82	Disbursing.
4,340 36	4,340 36	2,974 48	-	1,365 88	Do.
-	200 00	50 45	-	149 55	Do.
-	301 32	300 00	-	1 32	Due U. S. on settlement.
-	312 16	240 13	-	72 03	Do do.
63 19	563 19	563 19	-	-	Closed.
-	107 02	108 19	1 17	-	Disbursing.
127 77	127 77	127 77	-	-	Closed.
1,208 22	1,208 22	407 89	-	800 33	Disbursing.
-	115 77	-	-	115 77	Account not received.
-	526 37	526 37	-	-	Closed.
-	-	72 75	72 75	-	Disbursing.
-	-	200 00	200 00	-	Do.
2,150 86	2,200 86	2,200 86	-	-	Closed.
3,536 23	4,536 78	1,199 76	-	3,337 02	Disbursing; account 3d quarter not received.
38 92	38 92	38 92	-	-	Closed.
-	100 00	100 00	-	-	Do.
9,070 83	10,472 80	7,324 21	-	3,148 59	Disbursing.
29 37	29 37	29 37	-	-	Closed.
2,151 74	2,173 91	1,366 80	-	807 11	Disbursing.
-	59,323 05	39,440 37	-	19,882 68	Ordered to be deposited to the credit of Treasurer United States.
170,033 76	1,002,553 76	955,372 07	116,287 58	163,469 46	

STATEMENT—Continued.

RECAPITULATION.

Total charged - - - - - - -		$1,002,553 95
Balances due to disbursing officers on the settlement of their accounts - - - - - - - -		116,287 58
		$1,118,841 53
Total accounted for - - - - - -		955,372 07
		$163,469 46
Deduct:		
This sum charged to contractors as the difference in price of stores purchased to supply deficiencies arising from their failures - - - - - -	$922 77	
For remittances late in the 3d, for expenditures in the 4th quarter - - - - - -	52,800 00	
This sum, being in the possession of officers who have ceased to disburse, and who have been ordered to deposite it in banks to the credit of the Treasurer of the United States - - - - - -	28,363 68	
This sum, being expended in the removal and subsistence of Indians, and so credited on that account -	5,000 00	
		87,086 45
Leaving in the hands of the disbursing officers of the department on the 30th of September, 1837, applicable to the expenditures of the 4th quarter of the year - - - - - -		$76,383 01

OFFICE OF THE COM. GEN. OF SUBSISTENCE,
Washington, November 18, 1837.

GEO. GIBSON, *C. G. S.*

No. 10.

REPORT OF THE ACTING SURGEON GENERAL.

SURGEON GENERAL'S OFFICE,
November 29, 1837.

SIR: In compliance with your instructions, I have the honor to report that the medical and hospital supplies for the army during the past year were put up and transmitted to the several posts in due time; and were all received in good order, with the exception of those intended for Fort Towson, which were lost by the sinking of a keel-boat while ascending the Red river. As soon as the fact of their loss was reported to this office, directions were given to the medical purveyor to forward another supply to that post, which was immediately done. These supplies, with the public property previously in charge of the officers of this department, have all been satisfactorily accounted for by the returns of the surgeons and assistant surgeons; which also show that the hospitals have been well supplied with all necessary articles, of the best quality, for the comfort and convenience of the sick; and, from the well-arranged system of responsibility adopted, all has been done at the smallest possible expense to the department.

The law requiring an examination of all candidates, by a medical board, before admission into the medical staff of the army, still continues to prove of the greatest advantage, by securing that professional knowledge so essentially necessary to enable the officers of this department to perform the very important duties required of them.

Since the last annual report, *thirty* applicants, who had been recommended as well qualified for appointment, were invited to present themselves for examination before an army medical board, which was convened in the city of New York in the month of May last: of which number, fifteen declined the invitation, or failed to attend; and of the remaining fifteen who presented themselves, eight were rejected, and two withdrew; leaving only *five* who were found qualified for the appointment they had solicited; being just *one-sixth* of those who had been authorized to attend the board.

The assistant surgeons, as well as the surgeons of the army, being at all times liable to be called on to decide in the most important and critical cases, remote from all professional aid or assistance, it is necessary they should be well versed in the details of practice, in addition to being well grounded in the elementary branches of their profession. The medical board have therefore been instructed, in all cases, to make the most full and rigid examination of every candidate, relative to his professional acquirements, physical qualifications, and moral habits; and to report favorably on no case admitting of a reasonable doubt.

It may here be proper for me to inform you that, during the last year, two applicants, who had, at their own expense, attended the examinations, and were approved by the board, declined to accept commissions when tendered to them; and, as the number of applicants is far less numerous than formerly, I fear much difficulty will be found in procuring competent persons to fill the department, unless their compensation shall be increased.

The amount advanced on account of the Medical and Hospital department of the army, during the fourth quarter of 1836, and the first, second, and third quarters of the present year, has been $15,516 12; of which sum $10,314 66 has been expended, and for which accounts have been rendered and settled; leaving in the hands of the disbursing officers of this department, on the 30th September last, $5,201 46, for which they are held responsible.

The amount paid by warrants on the Treasury for claims of private physicians and others, presented and admitted, during the period above stated, has been $13,131 87½. There has also been advanced, during the year stated, to disbursing officers of this department, on account of the appropriation for preventing and suppressing Indian hostilities, $10,522 24; of which $9,365 42 has been expended, and for which their accounts have been received and settled; leaving a balance at the end of the third quarter of the present year in their hands, of one thousand one hundred and fifty-six dollars and eighty-four cents.

I have again respectfully to call the attention of the Department to the regulations relative to hospital stewards. There is no class of persons in the employment of the Government so badly paid as they are. Their services are very arduous and important: hence it is necessary they should be intelligent, honest, and sober, and capable of compounding and administering to the sick the prescriptions of the surgeons. As such individuals cannot be obtained for the compensation allowed them by the present regulations, I most respectfully recommend that the steward to a post of four or more companies be allowed the pay, clothing, and rations of a sergeant of ordnance; and the steward at all other posts be allowed the pay, clothing, and rations of the first sergeant of a company.

I must also call the attention of the Department to the condition of the hospitals at the different military posts; many of which are entirely without a building for the accommodation of the sick; and at others, the buildings used for this purpose are old and totally unsuited for the purpose for which they are appropriated. I must therefore request that an appropriation may be asked for to erect such hospitals during the ensuing year as are absolutely necessary.

The whole number of cases which have been under the medical treatment of the officers of this department, during the year ending the 30th of September last, has been 18,949; of which number 32 have died of remittent fever, 25 of typhus fever, 14 of pneumonia, 20 of phthisis, 22 of diarrhœa, 19 of dysentery, 3 of epilepsy, 7 of wounds, 8 of dropsy, 9 of gastro-enteritis, 9 of intemperance, 4 of apoplexy, and 22 from other diseases; making 194 deaths during the year. Of these, 10 died at Fort Monroe, 19 at Fort Gibson and the dragoon camp near that post, 113 at the various forts and stations in Florida, 7 at Fort Leavenworth, 12 at Fort Mitchell, 10 at Fort Jesup, 7 at Nacogdoches and Camp Sabine, 6 at Fort Towson, and 10 at other places. The largest number of deaths occurred in the fourth quarter of 1836 and the third quarter of the present year.

Very respectfully, your obedient servant,

BENJAMIN KING,
Acting Surgeon General.

Hon. J. R. Poinsett, *Secretary of War, Washinton.*

No. 11.

REPORT OF THE PAYMASTER GENERAL.

PAYMASTER GENERAL'S OFFICE,
Washington, November 30, 1837.

SIR: I have the honor herewith to lay before you a statement of the transactions of the Pay department for the fiscal year ending the 30th of September, 1837.

The balances in the hands of paymasters on the 1st of October, 1836, and the advances made to them within the year, amount to $3,817,272 16. Of this, $3,183,618 21 have been expended and accounted for, and $422,269 35 are applicable to the payments of the present quarter, leaving a balance of $211,384 60 to be accounted for.

The troops are paid to as late dates as they generally are at this season of the year, with the exception of those in Paymaster Rector's district; and in that district the commanding officer would not permit the paymaster to use the funds furnished for that purpose.

It will be seen by the tabular statement accompanying this, that the advances for the regular troops amount to $1,591,577 59, and for volunteers and militia to $2,225,694 57. In comparing the expenses of the two forces, it must be recollected that the service of the regular troops is continuous; that of volunteers for short periods: that the latter are allowed clothing according to the time they agree to serve, and not for the time they actually do serve: that, on an average, one-fifth of the time paid for is taken up in going from and returning home; and that the pay and allowances of a *mounted* volunteer, including the expenses of his horse, are equal to the cost of four privates of infantry. The reluctance of volunteers to serve on foot has compelled the employment of an undue proportion of *mounted* troops; and to this, in a great measure, may be ascribed the heavy expense of the late Indian wars. Not one cent appropriated for the suppression of Indian hostilities has been expended by this department in payment of regular troops. So far as the *army* has been employed, it has cost the United States no more than is appropriated for it in time of peace, except for transportation.

The heavy duty of the department for the last year made it necessary to obtain the services of officers from the line of the army, as provided for by the 3d section of the act of July 4, 1836. So far as the department is concerned, this is the best arrangement that can be made for cases of emergency, as the knowledge officers possess of military usage enables them to comprehend the duties of the office in less time than any other description of persons; but it produces inconvenience to the line, by depriving it of valuable officers when their services are most wanted; and I respectfully recommend, if any change is made in the army, that the appointment of temporary paymasters shall not be confined to officers of the line. This is the only alteration considered necessary in the organization of the Pay department, unless it be the one suggested in my

letter to your predecessor, of the 19th November, 1836, which applies to all staff departments.

It is the opinion of paymasters that Congress intended their compensation should be equal to that of other officers of the staff, who received the pay and emoluments of majors, and they have heretofore claimed it. The accounting officers put a different construction on the law; in consequence of which, paymasters do not receive as much as majors of the staff by forty-six dollars per month, including the double rations of the latter. The question has been before the United States courts, and different decisions given. On an appeal, in one case, to the Supreme Court, the decision was adverse to the claim of the officer; but it is believed to have been on grounds that do not affect the merits of the question. Concurring, as I do, in opinion with the paymasters, and knowing that the many disallowances in the settlement of their accounts, and other losses, would reduce their compensation, if they received cavalry pay, to less than that of majors of infantry, I consider it my duty to request that the subject may be presented to Congress in the way best calculated to obtain the passage of an act explanatory of the 3d section of the act of 24th April, 1816, fixing the pay and emoluments of paymasters so as to place them on a footing with other disbursing officers of the staff.

Respectfully, your obedient servant,

N. TOWSON,
Paymaster General.

To the Hon. J. R. POINSETT,
Secretary of War.

STATEMENT

ACCOMPANYING

THE PAYMASTER GENERAL'S REPORT.

[Doc. No. 3.]

Statement of moneys drawn from the appropriations for the Pay depart fourth quarter of 1836, *and the first, second, and third quarters of the fourth quarter of* 1837 ; *the balances to be accounted for ; the pe-*

PAYMASTERS—ARMY.	Amount of funds remitted in the fourth quarter of 1836, first quarters of 1837.				
	Pay.	Subsist-ence.	Forage.	Servants' clothing.	Payments in lieu of clothing.
B. F. Larned - -	$63,000	$22,700	$1,300	$600	$2,500
D. S. Townsend - -	37,400	9,900	1,450	750	1,600
Daniel Randall, - -	98,200	30,450	2,550	1,100	1,700
C. H. Smith - -	78,100	22,950	900	650	3,400
A. A. Massias - -	124,100	27,800	1,600	1,000	5,500
T. P. Andrews - -	59,500	31,300	1,300	1,000	1,900
Edmund Kirby - -	68,250	24,800	1,500	850	1,600
L. G. De Russy - -	21,000	8,400	400	200	-
R. A. Forsyth - -	39,000	18,400	600	500	1,500
A. D. Steuart - -	18,000	5,500	400	200	-
W. S. Harney - -	38,800	18,300	700	500	1,700
J. S. Lytle - -	7,000	2,750	150	100	-
Peter Muhlenberg - -	60,200	26,850	900	550	1,500
Elbert Herring - -	25,750	13,000	450	300	1,300
Wharton Rector - -	105,100	38,250	1,250	900	4,500
Christopher Andrews -	39,000	10,200	500	300	-
Donald Fraser - -	84,250	43,190	1,540	1,160	160
Thomas J. Leslie - -	20,000	7,400	400	200	2,000
Benjamin Walker - -	4,000	1,000	-	-	-
Isaac Clark - -	10,000	-	-	-	-
M. C. Buck - -	7,750	1,750	300	200	-
Richard Bennett - -	11,000	7,600	200	200	1,000
J. B. Grayson - -					
	1,019,400	372,490	18,390	11,260	31,860
Unexpended balances of the 3d quarter of 1836, (per last statement,) since expended	114,785 99	-	903 71	942 65	-
Balances remaining to be accounted for on last statement, since settled -	21,545 24	-	-	-	-
Total of army -	1,155,731 23	372,490	19,293 71	12,202 65	31,860

ment, and remitted to disbursing officers on account of payments for the 1837; the amount unexpended, and forming part of their estimates for riods to which the troops have been paid, and accounts rendered.

and the three	Amount unexpended and forming part of estimates for the fourth quarter of 1837.				
Amount.	Pay.	Subsistence.	Forage.	Clothing.	Amount.
$90,100					
51,100	$2,020 68	$244 57	$571 83	$463 91	$3,300 99
134,000	5,834 51	-	-	-	5,834 51
106,000	12,001 01	-	-	-	12,001 01
160,000					
95,000					
97,000	4,181 44	-	-	55 10	4,236 54
30,000					
60,000					
24,100	46 03	-	-	-	46 03
60,000	22,076 72	-	-	-	22,076 72
10,000					
90,000	8,066 14	-	-	-	8,066 14
40,800					
150,000					
50,000					
130,300	2,741 37	4,463 20	260 65	441 08	7,906 30
30,000					
5,000					
10,000					
10,000	2,116 44	289 46	11 37	92 08	2,509 35
20,000	338 48	-	-	-	338 48
1,453,400	59,422 82	4,997 23	843 85	1,052 17	66,316 07
116,632 35					
21,545 24					
1,591,577 59	59,422 82	4,997 23	843 85	1,052 17	66,316 07

STATEMENT

PAYMASTERS.—ARMY.	Balances remaining to be accounted for.			Periods to which the troops have been paid, for which accounts have been rendered.
	Pay.	Subsistence.	Amount.	
B. F. Larned -	-	-	-	1st September, 1837.
D. S. Townsend -	-	-	-	Do do.
Daniel Randall -	-	-	-	1st November, do.
C. H. Smith -	-	-	-	Do do.
A. A. Massias -	$70,113 01	17,800 00	$87,913 01	1st May, do
T. P. Andrews -	-	-	-	1st November, do.
Edmund Kirby -	-	-	-	1st September, do.
L. G. De Russy -	-	-	-	1st March, do
R. A Forsyth -	-	-	-	1st May and 1st September, do.
A. D. Steuart -	-	-	-	District paid by Paymaster Massias - -
W. S. Harney -	12,427 65	-	12,427 65	- - - -
J. S. Lytle -	-	-	-	1st September, 1837
Peter Muhlenberg -	-	-	-	1st July & 1st Sept. do.
Elbert Herring -	-	-	-	1st November, do.
Wharton Rector -	20,800 00	-	20,800 00	1st November, 1836, and 1st January, 1837
Christopher Andrews	-	-	-	1st September, do
Donald Fraser -	-	-	-	Do do.
Thomas J. Leslie -	-	-	-	Do do.
Benjamin Walker -	50,894 34	10,800 01	61,694 35	1st Mar. & 1st May, do
Isaac Clark -	-	-	-	- - - -
M. C. Buck -	-	-	-	- - - -
Richard Bennett -	-	-	-	1st September, do
J. B. Grayson -	-	-	-	Do do
Total of army -	154,235 00	28,600 01	182,835 01	

—Continued.

REMARKS.

The troops of this district are reported to be paid to 1st November, 1837, and the accounts are daily expected.

On furlough from 10th July to 2d November, 1837; turned over his funds to Paymaster Walker, who is charged with the payment of the district. (See remarks opposite his name.)

Paymaster Steuart has been employed in paying the volunteers of Kentucky and Tennessee.
Resigned.

The commanding officer forbade the payment of the troops of this district in the funds furnished to the paymaster.
Refunded $50,000 to the Treasury, the paymaster not being able to use the drafts.

Appointed acting paymaster under the act of 4th July, 1836. The payment of this district has been delayed by the troops objecting to receive the funds furnished the paymaster. The objection has been withdrawn, and the district is probably paid to the 1st November, 1837, but the accounts are not received.

Appointed acting paymaster under act 4th July. 1836.			Resigned.
Do	do	do	do.
Do	do	do	do.
Do	do	do	do.

STATEMENT

PAYMASTERS.—MILITIA.	Amount of funds remitted in the fourth quarter of 1836 first quarters of 1837.				
	Pay.	Subsistence.	Forage.	Servants' clothing.	Payments in lieu of clothing.
D. Randall - - -	$6,000	-	-	-	-
C. S. Smith - - -	155,000	-	-	-	-
T. P. Andrews - -	540,000	-	-	-	-
R. A. Forsyth - -	100,000	-	-	-	-
A. D. Steuart - -	333,310	-	-	-	-
J. S. Lytle - -	20,000	-	-	-	-
C. Mapes - -	45,000	-	-	-	-
P. Muhlenberg - -	130,000	-	-	-	-
W. Rector - -	140,000	-	-	-	-
C. Andrews - -	145,000	-	-	-	-
D. Fraser - -	150,450 92	-	-	-	-
M. C. Buck - -	175,000	-	-	-	-
R. Bennett - -	133,000	-	-	-	-
R. D. A. Wade - -	55,000	-	-	-	-
J. B. Grayson - -	-	-	-	-	-
J. C. Casey - -	-	-	-	-	-
D. Perkins - -	-	-	-	-	-
	2,127,760 92	-	-	-	-
Unexpended balances of 3d quarter of 1836, per last statement, since expended	36,776 43	-	-	-	-
Balances remaining to be accounted for on last statement, since settled -	61,157 22	-	-	-	-
Total of militia - -	2,225,694 57	-	-	-	-
Total of army and militia	3,381,425 80	372,490	19,293 71	12,202 65	31,860

—Continued.

and the three	Amount unexpended and forming part of estimates for the fourth quarter of 1837.				
Amount.	Pay.	Subsistence.	Forage.	Clothing.	Amount.
$6,000					
155,000					
540,000					
100,000	$43,657 23	-	-	-	$43,657 23
333,310	1,310 53	-	-	-	1,310 53
20,000					
45,000					
130,000	37,502 31	-	-	-	37,502 31
140,000	13,219 76	-	-	-	13,219 76
145,000	120,484 99	-	-	-	120,484 99
150,450 92	46,940 40	-	-	-	46,940 40
175,000	64,476 97	-	-	-	64,476 97
133,000	4,411 68	-	-	-	4,411 68
55,000	32 59	-	-	-	32 59
-	13,732 41	-	-	-	13,732 41
-	8,184 41	-	-	-	8,184 41
-	2,000 00	-	-	-	2,000 00
2,127,760 92	355,953 28	-	-	-	355,953 28
36,776 43					
61,157 22					
2,225,694 57	355,953 28	-	-	-	355,953 28
3,817,272 16	415,376 10	4,997 23	843 85	1,052 17	422,269 35

STATEMENT

PAYMASTERS.—MILITIA.	Balances remaining to be accounted for.			Periods to which the troops have been paid, for which accounts have been rendered.
	Pay.	Subsistence.	Amount.	
D. Randall - -				
C. H. Smith - -				
T. P. Andrews - -				
R. A. Forsyth - -				
A. D. Steuart - -				
J. S. Lytle - -				
C. Mapes - -	28,549 59	-	28,549 59	- -
P. Muhlenberg - -				
W. Rector - -				
C. Andrews - -				
D. Fraser - -				
M. C. Buck - -	-	-	-	- -
R. Bennett - -	-	-	-	- -
R. D. A. Wade - -	-	-	-	- -
J. B. Grayson - -	-	-	-	- -
J. C. Casey - -	-	-	-	- -
D. Perkins - -	-	-	-	- -
Total of militia - -	28,549 59	-	28,549 59	
Total of army and militia	182,784 59	28,600 01	211,384 60	

—Continued.

REMARKS.

Paymaster Mapes is now employed in disbursing his balance in Florida.

Appointed acting paymaster under act of 4th July, 1836.
Appointed acting paymaster under act of 4th July, 1836.
Appointed acting paymaster under act of 4th July, 1836.
Appointed do do Received funds of Paym'r T. P. Andrews.
Appointed do do Received funds of Paymaster Fraser.
Appointed do do Received funds of Paymaster Steuart.

PAYMASTER GENERAL'S OFFICE,
November 30, 1837.

N. TOWSON, *P. M. G.*

No. 12.

REPORT OF THE COMMISSARY GENERAL OF PURCHASES.

COMMISSARY GENERAL'S OFFICE,
Philadelphia, October 28, 1837.

SIR: In obedience to instructions from the Department of War, dated on the 11th instant, I have prepared, and have the honor of enclosing, my moneyed estimates for the year 1838, marked A and B, as follows, viz:

A. For clothing, camp equipage, &c., for one year, ending with October, 1839, - - - -	$318,299 13
B. For the expenses of the Commissary General's office during the year 1838 - - - - -	8,000 00
	$326,299 13

I likewise enclose twelve statements, numbered 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, and 12, prepared in obedience to your order, viz:

No. 1. Statement of moneys drawn from the appropriation for the Purchasing department, to the 30th September, 1837.

No. 2. Statement of moneys drawn from the appropriation for additional dragoons, &c., to the 30th September, 1837.

No. 3. Statement of moneys drawn from the appropriation for preventing and suppressing Indian hostilities, to the 30th September, 1837.

No. 4. Statement of moneys drawn from the special appropriation for the payment of taxes assessed on the public property, United States arsenal near Philadelphia, to 30th September, 1837.

No. 5. Statement of moneys received and disbursed during the three first quarters of 1837, on account of the Purchasing department.

No. 6. Statement of moneys received and disbursed during the three first quarters of 1837, on account of additional dragoons or mounted riflemen.

No. 7. Statement of moneys received and disbursed during the three first quarters of 1837, on account of the appropriation for preventing and suppressing Indian hostilities.

No. 8. Statement of moneys remaining on hand on the 1st January, 1837, belonging to the appropriation for volunteers and militia, with its disbursement, to 30th September, 1837.

No. 9. Statement of moneys received and disbursed during the three first quarters of 1837, on account of appropriation for the payment of taxes on the United States arsenal, for the years 1835 and 1836.

No. 10. The United States in account current with the Commissary General of Purchases, to 30th September, 1837.

No. 11. Comparative statement of the cost of clothing, &c., for the United States army, during the years 1836, 1837, and 1838.

No. 12. Statement of the cost of clothing, &c., for the United States army, during the year 1838.

The clothing and materials, therefore, that may remain on hand after the completion of the orders for this year, if any, will be so inconsiderable in their amounts, that I have deemed it safer not to make any deduction on that account from the moneyed estimate. The duplicates will be forwarded as early as they can be prepared.

I have the honor to be, sir,
With great respect,
Your most obedient servant,
C. IRVINE,
Commissary General of Purchases.

Hon. J. R. POINSETT,
Secretary of War.

No. 1.

Statement of moneys drawn from the appropriation for the Purchasing department, during the three first quarters of the year 1837.

1837.			
May	19	By Secretary of the Treasury's warrant No. 6548	$15,000 00
"	"	Do. do. 6549	15,000 00
"	27	By Treasurer's draft No. 44 - -	15,000 00
"	"	Do. 45 - -	15,000 00
June	23	Do. 340 - -	15,000 00
July	10	Do. 730 - -	20,000 00
"	31	Do. 1720 - -	15,443 65
August	11	Do. 1935 - -	15,000 00
"	14	Do. 1934 - -	10,000 00
Sept.	12	Do. 2365 - -	20,000 00
"	30	By transfer from appropriation for suppressing and preventing Indian hostilities -	40,000 00
			$195,443 65

COMMISSARY GENERAL'S OFFICE,
Philadelphia, October 28, 1837.

C. IRVINE,
Commissary General of Purchases.

Hon. J. R. POINSETT,
Secretary of War.

No. 2.

Statement of moneys drawn from the appropriation for additional dragoons or mounted riflemen, during the first three quarters of 1837.

1837.		
January 5	Received Secretary of the Treasury's warrant, No. 5373, dated December 31, 1836, paid January 5, 1837, - - -	$35,000 00

COMMISSARY GENERAL'S OFFICE,
Philadelphia, October 28, 1837.

C. IRVINE,
Commissary General of Purchases.

Hon. J. R. POINSETT,
Secretary of War.

No. 3.

Statement of moneys drawn from the appropriation for preventing and suppressing Indian hostilities, during the first three quarters of 1837.

1837.		
March 16	Received Secretary of the Treasury's warrant, No. 5895, - - - -	$11,000 00
25	Received Secretary of the Treasury's warrant, No. 6067, - - - -	40,000 00
		$51,000 00

COMMISSARY GENERAL'S OFFICE,
Philadelphia, October 28, 1837.

C. IRVINE,
Commissary General of Purchases.

Hon. J. R. POINSETT,
Secretary of War.

No. 4.

Statement of moneys drawn from the special appropriation for the payment of taxes assessed on the public property (United States arsenal) near this city, during the first three quarters of 1837.

1837. March 25	Received Secretary of the Treasury's warrant, No. 6057, - - - -	$1,450 50

COMMISSARY GENERAL'S OFFICE,
Philadelphia, October 28, 1837.

C. IRVINE,
Commissary General of Purchases.

Hon. J. R. POINSETT, *Secretary of War.*

No. 5.

Statement of moneys received and disbursed by the Commissary General of Purchases during the three first quarters of the year 1837, *on account of the Purchasing department.*

To amount of moneys drawn from the Treasury department from the 11th May, 1837, to the 30th September following, on account of Purchasing department, as per statement No 1, - - - - - -		$195,443 65
By amount expended during the first quarter of 1837, passed to the credit of the Commissary General of Purchases, as per account settled by the Second Auditor of Treasury Department, - - -	$34,109 19	
By amount expended during the second quarter of 1837, passed to the credit of the Commissary General of Purchases, as per account settled by the Second Auditor of Treasury Department, - - -	108,842 75	
By amount expended during the third quarter of 1837, per the Commissary General of Purchases, per account now in preparation for transmission to the Second Auditor of Treasury Department for examination and settlement, - - - - -	76,962 18	
		219,914 12
Disbursed beyond the amount received, - - -		$24,470 47

COMMISSARY GENERAL'S OFFICE,
Philadelphia, October 28, 1837.

C. IRVINE,
Commissary General of Purchases.

Hon. J. R. POINSETT,
Secretary of War.

No. 6.

Statement of moneys received and disbursed on account of appropriation for additional dragoons or mounted riflemen, during the first three quarters of the year 1837.

To amount received from the Treasury Department on the 5th January, 1837, as per statement No. 2 - -		$35,000 00
By amount disbursed during the first quarter of 1837, passed to the credit of the Commissary General of Purchases, as per account settled by the Second Auditor Treasury Department	$4,206 28	
By amount disbursed during the second quarter of 1837, passed to the credit of the Commissary General of Purchases, as per account settled by Second Auditor Treasury Department	11,575 17	
By amount expended during the third quarter of 1837, per the Commissary General of Purchases, as per account now in preparation for transmission to the Second Auditor for examination and settlement - - -	8,513 29	
		24,294 74
		10,705 26
Deduct amount embraced in settlement fourth quarter 1836 -		4,759 07
Balance remaining unexpended, October 1, 1837 - -		$5,946 19

COMMISSARY GENERAL'S OFFICE,
Philadelphia, October 28, 1837.

C. IRVINE,
Commissary General of Purchases.

Hon. J. R. POINSETT,
Secretary of War.

No. 7.

Statement of moneys received and disbursed by the Commissary Genera of Purchases, during the first three quarters of the year 1837, *on account of appropriation for preventing and suppressing Indian hostilities.*

To amount of moneys drawn from the Treasury during the three first quarters of 1837, as per statement No 3 -		$51,000 00
By amount expended during the first quarter of 1837, passed to the credit of the Commissary General of Purchases, as per account settled by the Second Auditor Treasury Department	$4,839 37	

By amount expended during the second quarter of 1837, passed to the credit of the Commissary General of Purchases, as per account settled by Second Auditor Treasury Department	$4,656 88	
By amount expended during the third quarter of 1837, per the Commissary General of Purchases, per account now in preparation for transmission to the Second Auditor Treasury Department for examination and settlement - - - - -	278 62	
By this sum, transferred to the Purchasing department on 30th September, 1837, per order of Secretary of War - - -	40,000 00	
		49,774 87
Balance remaining unexpended, October 1, 1837 - -		$1,225 13

COMMISSARY GENERAL'S OFFICE,
Philadelphia, October 28, 1837.

C. IRVINE,
Commissary General of Purchases.

Hon. J. R. POINSETT,
Secretary of War.

No. 8.

Statement of moneys remaining on hand on the 1st January, 1837, belonging to the appropriation for volunteers and militia, and disbursed up to the 30th September, 1837.

1837.		
January 1	To balance remaining unexpended - -	$18,168 23
	By amount expended during the first quarter of 1837, passed to the credit of the Commissary General of Purchases, as per account settled by the Second Auditor Treasury Department - - - -	3,081 64
	Balance remaining unexpended October 1, 1837 - - - - -	$15,086 59

COMMISSARY GENERAL'S OFFICE,
Philadelphia, October 28, 1837.

C. IRVINE,
Commissary General of Purchases.

Hon. J. R. POINSETT,
Secretary of War.

No. 9.

Statement of moneys received to 30th September, 1837, on account of special appropriation for the payment of taxes assessed on the public property (United States arsenal) near Philadelphia, for the years 1835 and 1836.

1837.		
March 25	Received Secretary of the Treasury's warrant No. 6057 - - - -	$1,450 50
28	Paid Geo. W. South in full for taxes assessed on the United States arsenal on Schuylkill for the years 1835 and 1836 - -	$1,450 50

COMMISSARY GENERAL'S OFFICE,
Philadelphia, October 28, 1837.

C. IRVINE,
Commissary General of Purchases.

Hon. J. R. POINSETT,
Secretary of War.

No. 10.

DR. *The United States in account current with Callender Irvine, Commissary General of Purchases.* CR.

1837.			1837.		
October 1	To balance due C. Irvine, Commissary General of Purchases, on account of Purchasing department, per statement No. 5, - - - - -	$24,470 47	October 1	By balance due United States, on account of additional dragoons, &c., per statement No. 6, - - -	$5,946 19
			"	By balance due United States on account of preventing and suppressing Indian hostilities, per statement No. 7, - - - - -	1,225 13
			"	By balance due United States on account of volunteers and militia, per statement No. 8, - - -	15,086 59
			"	By balance per contra, - -	2,212 56
		$24,470 47			$24,470 47
"	To balance due C. Irvine, Commissary General of Purchases, - -	$2,212 56			

COMMISSARY GENERAL'S OFFICE,
Philadelphia, October 28, 1837.

C. IRVINE,
Commissary General of Purchases.

Honorable J. R. POINSETT,
Secretary of War.

No. 11.

Comparative statement of the cost of clothing, &c. for the United States army, during the years 1836, 1837, *and* 1838.

GARMENTS, &c.	Prices, 1836.	Prices, 1837.	Prices, 1838.
Forage caps, artillery and infantry - -	$ 80	$ 75	$ 75
Do dragoon - - -	80	85	85
Uniform caps with metal equipments, art. & inf.	2 05	2 05	2 05
Do do dragoon	2 20	2 46	2 20
Epaulets for non-commissioned staff, pairs -	2 37½	2 37½	2 50
Do corporals - do -	1 00	1 00	1 00
Do sergeants - do -	1 00	1 00	1 00
Shoulder straps - - do -	50	50	50
Aiguillettes, each - - - -	1 25	1 25	1 75
Sashes, crimson - - - -	2 12½	1 95	2 25
Do yellow - - - -	2 12½	1 70	1 95
Pompons for non-commissioned staff - -	37½	37½	37½
Do artillery - - - -	22	22	20
Do infantry - - - -	20	20	18
Woollen overalls, sergeants' infantry - -	3 33	3 36¼	3 32¼
Do do artillery - -	3 33	3 36¼	3 35
Do privates' - - -	2 97	3 02	3 05½
Drilling overalls, privates' - - -	66	68½	69½
Do sergeants' - - -	79	81½	80¾
Infantry sergeants' drilling jackets with sleeves	91	96	98½
Do privates' do do -	76	81	84¾
Artillery privates' do do -	81	86	89¾
Do sergeants' do do -	96	1 01	1 03¾
Do sky-blue cloth jackets with sleeves -	3 41	3 41	3 51
Infantry do do do -	3 29	3 29	3 44
Cotton shirts, privates' - - -	46	48½	56½
Do sergeants' - - -	65	67½	66½
Flannel shirts - - - -	1 16	1 18½	1 12¾
Canton flannel drawers - - -	53	53	56
Laced bootees, pairs - - - -	1 46	1 46	1 62½
Stockings do - - - -	35½	35	35⅓
Blankets - - - - -	3 00	3 00	3 00
Great coats - - - - -	8 31	8 31	9 59
Leather stocks - - - -	13	13	13
Knapsacks - - - - -	1 55	1 55	1 42
Haversacks - - - - -	25¾	25¾	26
Infantry sergeants' coats - - -	6 71	6 71	6 40¼
Do privates' do - - -	6 71	6 71	6 38
Do musicians' do - - -	8 23	8 23	7 96
Do principal musicians' coats - -	10 00	10 00	10 07

No. 11—Continued.

GARMENTS, &c.	Prices, 1836.	Prices, 1837.	Prices, 1838.
Infantry sergeant majors' and quartermaster sergeants' coats - - - -	$8 48	$8 48	$8 49
Artillery sergeants' coats - - -	7 02	7 02	6 85
Do privates' coats - - -	7 02	7 02	6 82
Do musicians' coats - - -	8 33	8 38	8 11½
Do sergeant majors' and quartermaster sergeants' coats - - -	9 97	9 97	9 29¾
Dragoon privates' woollen overalls - -	4 29	4 34	4 47½
Do sergeants' do - - -	4 55	4 61	4 71¾
Do privates' cotton overalls - -	1 04	1 06¼	1 14
Do sergeants' do - -	1 25	1 30	1 29¼
Do privates' cloth jackets - -	4 93	5 03	5 02¼
Do sergeants' do - - -	5 01	5 11	5 06¾
Do privates' cotton jackets - -	89	94	99½
Do sergeants' do - - -	1 04	1 11½	1 11
Do sergeant majors' coats - -	7 37	7 37½	7 56½
Do corporals' and privates' coats -	6 72	6 72	6 07¼
Do music coats - - - -	8 24	8 24	7 51
Do principal music coats - -	8 89	8 89	9 00
Do sergeants' coats - - -	6 72	6 72	6 13
Do shoulder straps, brass, pairs - -	94	93	93
Do great coats - - - -	10 52	10 59½	11 96¼
Do hair plumes - - - -	60	58	60
Do bands and tassels - - -	54	60	70
Ordnance sergeants' coats - - -	7 02	7 02	6 85
Do privates' coats - - -	7 02	7 02	6 82
Do sergeants' woollen overalls - -	3 33	3 36¼	3 35

COMMISSARY GENERAL'S OFFICE,
Philadelphia, October 28, 1837.

C. IRVINE,
Commissary General of Purchases.

Hon. J. R. POINSETT,
Secretary of War.

No. 12.

Cost of clothing, &c. to be provided for the army of the United States in the year 1838.

Dragoon	uniform cap	$1 75
Do	tulip	16½
Do	cap plate	28½
Do	band and tassels	70
Do	hair plume	60
Do	forage cap	85
Do	sergeant major's and quartermaster sergeant's coat	7 56½
Do	chief musician's coat	9 00
Do	sergeant's coat	6 13
Do	musician's coat	7 51
Do	corporal's and private's coat	6 07¼
Do	shoulder straps, brass, pair	93
Do	sash	1 95
Do	sergeant's cloth jacket	5 06¾
Do	private's do	5 02¼
Do	sergeant's cotton jacket	1 11
Do	private's do	99½
Do	sergeants' woollen overalls	4 71¾
Do	privates' do	4 47½
Do	sergeants' cotton overalls	1 29¼
Do	privates' do	1 14
Do	great coat	11 96¼
Artillery	uniform cap	1 75
Do	tulip	11
Do	cap plate	05
Do	number	04
Do	cannon-×	10
Do	pompon	20
Do	do for non-commissioned staff	37½
Do	forage cap	75
Do	sergeant major's and quartermaster sergeant's coat	9 29¾
Do	sergeant's coat	6 85
Do	musician's coat	8 11½
Do	corporal's and private's coat	6 82
Do	shoulder straps, pair	50
Do	epaulets for non-commissioned staff, pair	2 50
Do	do sergeants do	1 00
Do	do corporals do	1 00
Do	aiguillette	1 75
Do	sash	2 25
Do	woollen jacket	3 51
Do	sergeant's cotton jacket	1 03¾
Do	private's do	89¾
Do	sergeants' woollen overalls	3 35
Infantry	uniform cap	1 75

No. 12—Continued.

Infantry tulip	$ 11
Do cap plate	05
Do number	04
Do bugle	10
Do pompon	18
Do do for non-commissioned staff	37½
Do forage cap	75
Do sergeant major's and quartermaster sergeant's coat	8 49
Do chief musician's coat	10 07¼
Do corporal's and private's coat	6 38
Do shoulder straps, pair	50
Do epaulets for non-commissioned staff, pair	2 50
Do do sergeants, pair	1 00
Do do corporals, pair	1 00
Do aiguillette	1 75
Do sash	2 25
Do woollen jacket	3 44
Do sergeant's cotton jacket	98½
Do private's do	84¾
Do sergeants' woollen overalls	3 32¼
Do sergeant's coat	6 40¼
Do musician's do	7 96
Sergeants' cotton overalls	80¾
Privates' do	69½
Do woollen overalls	3 05½
Flannel shirt	1 12¾
Canton flannel drawers	56
Sergeant's cotton shirt	66½
Private's do	56½
Laced bootees, pair	1 62½
Stockings, do	35⅓
Leather stock	13
Blanket	3 00
Great coat	9 59
Knapsack	1 42
Haversack	26
Canteen, (wood,) complete	40
Canteen, (tin,) do	49
Letters for forage caps	05
Axe	1 25
Spade	62½
Camp-kettle	1 00
Mess pan	40
Bed sack, double	1 73¼
Do single	1 40
Hatchet	43
Garrison flag	41 76
Halliards, set, (average 10 lbs., at 37½ cents per lb.)	3 75

No. 12—Continued.

Recruiting flag	$7 00
Regimental and battalion colors, set	85 00
Guidon (for dragoons)	9 00
Drum, complete	6 62½
Do head batter	1 00
Do do snare	50
Do sling	45
Do sticks, pair	75
Do cord	25
Do snares, set	50
Fife	25
Bugle, with extra mouth-piece	4 50
Trumpet do do	6 00
Iron pot	1 80
Wall tent	15 44
Do fly	6 50
Hospital tent	91 50
Common tent	9 32
Wall tent poles, set	2 00
Hospital do	1 50
Common do	1 50
Bass drum	18 00
Nose bag	1 00
Horse blanket	2 90
Do brush	40
Iron mane comb	12½
Saddle, complete	14 00
Crupper	37½
Stirrup leathers, pair	62½
Girth	45
Surcingle	68¾
Saddle bags	4 75
Pad and coat straps	1 00
Bridle, complete	5 00
Martingale	1 00
Neck strap and chain	1 75
Spurs, pair	1 50
Curry comb	17
Marquee, complete	124 00

COMMISSARY GENERAL'S OFFICE,
Philadelphia, October 28, 1837.

C. IRVINE,
Commissary General of Purchases.

Hon. J. R. POINSETT,
Secretary of War.

No. 13.

REPORT FROM THE CHIEF ENGINEER.

ENGINEER DEPARTMENT,
Washington, November 30, 1837.

Hon. J. R. POINSETT, *Secretary of War:*

SIR: In conformity with your instructions, I have the honor to submit herewith a report of the operations of this department during the year ending September 30, 1837.

Accompanying it are three tabular statements: the first two relating to the fiscal affairs of the department; the third exhibiting the works projected by the Board of Engineers, which have not been commenced, and the estimate of their cost.

FORTIFICATIONS.

No appropriations under this head having been made for the service of the past year, operations have been continued, as far as practicable, with the balances of former appropriations.

They have been prosecuted with energy, as some of these balances were large, but by the close of the season will generally have exhausted all available funds.

Fort Warren, Boston harbor, Massachusetts.—Operations were resumed at this work the first of April. The average force employed has been two hundred and forty mechanics and laborers. Up to September 30, there had been laid nine thousand four hundred and seventy-eight cubic yards of stone work in piers and scarp walls; and two thousand seven hundred and forty-five cubic yards of brick work, containing 1,781,000 bricks; eight hundred and fifty running feet of scarp-wall have been carried up sixteen feet above the ditches along the two channel fronts, and part of another; the piers and arches of nineteen casemates are completed, twelve of which are of thirty feet span, and seven smaller. The piers of the other casemates are so far advanced that all the arches for the two channel fronts may be completed the next year.

Fort Independence, Boston harbor, Massachusetts.—About one hundred and thirty mechanics and laborers have been employed during the past season at this work; eight thousand one hundred and seventy-two cubic yards of masonry have been laid, comprising the foundation of the scarp-wall along two whole fronts, and part of two others; the superstructure of the same in part completed along two fronts, and twenty of the piers of the casemates on the channel fronts nearly completed. The embrasures of one of the channel fronts are finished,

Fort Adams, Narragansett roads, Rhode Island.—There having been no appropriation for the present year for Fort Adams, sixty thousand dollars were, by order of the President, transferred from the unexpended balance of appropriations for Fort Monroe; with this, and the remainder of the

last year's appropriation, the work has been prosecuted. Most of the excavation and embankment, both rock and earth, and a great portion of the masonry, have been completed, and progress has been made in flooring, partitioning, and plastering the casemates along the face of the northeast bastion. There yet remain to be finished portions of the glacis and of the earthen parapets, a small part of the scarps of the north and the west fronts, the remainder of the parade wall, all the breast-height walls, part of the permanent wharf above the water, the interior of the quarters and store-rooms, the gun-platforms, and a considerable portion of the redoubt. Much of this could be accomplished the next season with an early and liberal appropriation by Congress.

Fort Schuyler, Throg's neck, East river, New York.—By the purchase of a second steamboat and other auxiliaries, operations have been greatly facilitated at this work, and are now making very satisfactory progress. The sea-wall has been finished, with the exception of a small part of the coping, the foundations of a considerable portion of the scarp and counterscarp walls and piers of casemates laid, and the superstructure commenced. In the graduation of the site, nearly all the earth within the space occupied by the fort has been removed; the greater part of the embankment of the glacis and part of the rampart of the coverface have been formed.

Fort Columbus and Castle Williams, New York.—The repairs of these works are nearly completed; a small quantity of coping-stone remains to be executed, and some painting is required.

The sea has lately made encroachments upon the base of Castle Williams, which should be protected at an early day by a substantial sea-wall. The old sea-wall around the island requires repairing; five thousand dollars would put it in a state of tolerable security. Stone for traverse circles, and iron plates for the same, are yet wanted; and the two wharves on the Buttermilk channel require thorough repair. A detailed estimate for these several objects will be presented; the amount, $20,000, it is believed will complete the repairs of these works.

Fort Mifflin, Delaware river, Pennsylvania.—During the present year a gun-shed has been erected, the terreplein of the fort has been graduated and gravelled, pavements have been made about the quarters, some necessary out-buildings erected, and all the wood-work of the buildings painted; a mess-house and mess-room are now fitting up, and, on their completion, the fort will be ready to receive its garrison.

Rebuilding Fort Delaware, Delaware river.—No exertions were spared to hasten this work the past year, so far as could advantageously be done. It was continued till suspended by the ice in December. Little, however, was accomplished, in consequence of the very late appropriations; of the unusually high price of labor, and materials of all kinds; and of the great scarcity of laborers after funds had been furnished. For this season no appropriation was made, but the balance of that of the last year, together with a transfer of $34,800 from the appropriation for the forts in Charleston harbor, has enabled the officer in charge to prosecute the work vigorously; labor has been abundant and at reduced rates, large supplies of materials contracted for during the fall have been received, and a change in an important part of the operations has been most successful in its results, for economy and rapidity.

The following is a short synopsis of the operations of the season:

1st. Excavations for the foundations and the ditches of the fort, amounting to about twenty-seven thousand cubic yards.

2d. Driving piles for foundations. In consequence of the nature of the soil, these piles are of the great length of forty-five feet. A great improvement has this season been introduced in the method of driving them, by the substitution of steam-power for that of horses; more than fifteen piles per day, on an average, are driven with one pile-engine, which, when worked by horses, drove only three per day; the expense at the same time being very greatly diminished. It is found, too, that from the continuous tremulous motion imparted by the engine, the pile can be driven, not only with greater rapidity, but to a greater depth, without injury. The number of piles driven during the season, up to the 30th September, is 5,353, the work of about five months, commencing with one engine and never working more than three. The great importance of this change becomes evident when it is considered that at the commencement of the season there were twelve thousand piles to drive. There are now driven the foundations for two fronts, and the others are rapidly progressing.

3d. Receiving materials, to wit: Ten thousand six hundred tons of building-stone of large dimensions, two hundred and ninety-six thousand bricks, two thousand four hundred and ten piles, and three thousand three hundred cubic yards of building sand.

4th. Formation of four jettees projecting from the dike on the north and east sides of the island, to protect it from the abrasion of the river.

Repairs of Fort McHenry.—Since my last report, the parapet of the fort has been strengthened by a brick revetment-wall, the scarp-wall has been thoroughly repaired, the quarters new floored, painted and roofed, an additional battery nearly completed, one thousand three hundred feet of the sea-wall built, and fifteen acres of land purchased. The appropriation of 1836, together with the sum of five thousand dollars from the appropriation for "incidental expenses," will be exhausted by the end of the year. An estimate for further repairs which will be necessary, will be submitted.

Fort Monroe, Hampton Roads, Va.—There being no officer at the disposal of the department to take charge of this work, the funds appropriated have been transferred, by order of the President, to other works in progress, namely, $60,000 to Fort Adams and $90,000 to Fort Pulaski. An especial board of engineers appointed to examine this work having recommended extensive repairs, and its completion, an estimate will be submitted for the requisite appropriation. The bridge now connecting the site of Fort Monroe with the main land is the property of a private company; it is obviously improper, in a military point of view, that this sole direct communication of the fort with the surrounding country should be in any other hands than those of the Government; negotiations have therefore been entered into with the company, who are willing to sell it at a reasonable price. An estimate for the amount is submitted, the payment of which at once, will, in the end, be more economical than the subjection to the heavy tax now imposed on every person and thing that passes.

Fort Calhoun, Hampton Roads, Va.—In accordance with previous

instructions, the remainder of the stone was this year nearly removed from the foundations of the work, preparatory to commencing the masonry. A board of engineers, appointed in September, to inspect it, recommended, however, in the strongest terms, on account of the continued subsidence, the reloading of these foundations; accordingly, with the sanction of the proper department, instructions to this effect were immediately issued, and the reloading is now in progress.

Fort Caswell, Oak island, N. C.—Since the 30th September last, 1,360 cubic yards of masonry have been constructed, and 13,038 cubic yards of earth removed; the sheet-piling has been driven around the foundations of two of the caponnieres, and a considerable portion of the lead roofing has been laid.

The masonry constructed comprises the greater part of the counterforts and relieving-arches intended to strengthen the scarp-walls, the breast-height-walls of the covered way of the gorge, and of face No. 4, and the permanent tide-lock.

The effect of a storm, in August last, has been such as to prove conclusively the necessity of protecting the site of this fort from the sea abrasion which has been progressing for several years. A project for securing it will be submitted as soon as received from the local engineer.

Fortifications in Charleston harbor.—The department having no officer at its disposal for the superintendence of these works, they have been suspended, with the exception of the labor for the preservation of the site of Fort Moultrie, and the greater portion of the appropriation transferred, by order of the President, to other works, viz: to Fort Delaware, $34,800; to fort on Foster's bank, $27,000; to incidental expenses $33,200; and to contingencies of fortifications, $19,000.

The preservation of *Sullivan's island* has been committed to the superintendence of a civil agent, and some progress made therein. The general superintendent urges in his report the necessity of prompt and effectual measures for protecting this site. An inadequate appropriation will tend only to defeat the plan, as the peculiar nature of the case is such as to require that all the parts should progress as fast as practicable, to afford combined resistance against the desolating effect of the waves and currents. With his views I fully coincide, and submit an estimate in accordance therewith.

Fort Pulaski, Cockspur island, Georgia.—The operations at this fort, after preparations were completed in October, 1836, consisted principally in laying masonry of the rampart, embanking the parade, preservation of the island on the north and northeast shore by a breakwater and catch-sand, and constructing the permanent dikes of the island; 4,000 cubic yards of masonry have been laid in completing all the embrasures and piers generally of the north and northeast fronts, in completing seven embrasures, and their corresponding piers of casemates on the southeast front; completion, generally, of piers, and much progress in all the embrasures of the south front; and to the completion generally of the piers, walls, &c. of the gorge, to the level of the bottom of casemate floors. Considerable progress has been made in the embankments, and in the construction of the breakwater and permanent dikes.

Repairs of Fort Marion and the sea-wall, at St. Augustine, Florida.—Operations have been confined to the repair of the sea-wall. There was

completed, on the 30th of September, a length of 1,500 feet, with an average height of 8 feet, and 48 feet, with an average height of 4 feet, making 61,344 cubic feet of solid masonry. Of this, 24,000 cubic feet were from the public quarries three miles distant; the remainder was from the old wall. Besides the quantity laid, 17,000 cubic feet of stone have been quarried. The stone is a shell formation, and well laid in hydraulic cement.

Fort Pickens, Pensacola harbor, Florida.—The small balance of funds applicable to this work has been or will be expended this season on the finishing of the officers and soldiers' quarters, and some slight repairs.

Fort on Foster's bank, Florida.—The sum estimated for this work has been found sufficient for its completion, as, by the report of the superintending engineer, it was to have been completed in the month of October. Its site is now considered secure from any inroads of the sea, having been exposed in August last to a very severe gale, from which it sustained no injury. Several parts of the work, subject to the pressure of the arches, have been increased in their dimensions, and the terreplein covered with a terrace of masonry nine inches thick.

Twelve rooms have been fitted up in the casemates for officers' quarters, and six large ones for the soldiers. An appropriation of $33,000 will be asked for to meet the demand against the work, which, to this amount, has been constructed on the individual credit of the engineer.

Fort Livingston, Grande Terre, Louisiana.—Operations have remained suspended at this work during the year, for the want of an officer to superintend it. A keeper and one man are employed to take care of the public property, and make sundry small improvements near the site of the work.

CONTINGENCIES OF FORTIFICATIONS.

The balance of former appropriations under this head, and a transfer of about $3,000 from other appropriations, amounting in the whole to about $12,500, have been applied to making gun traverses, and to repairs of fortifications on the Gulf of Mexico.

Incidental expenses attending repairs of fortifications, and for the purchase of land in their neighborhood.—There was no appropriation under this head at the last session of Congress, but a transfer of $32,000 was made, by order of the President, in conformity with the second section of the act of appropriation of July, 1836, from the appropriation for fortifications in Charleston harbor. This transfer, as well as that of the whole appropriation for Fort Monroe, was made in consequence of the want of officers to superintend the expenditure. These amounts, in addition to an unexpended balance of $19,000, have been expended as follows: for repairs of Fort Mifflin, $29,000; repairs of Fort McHenry, $13,000; purchase of land near Fort Delaware, $4,000; and for purchase of gun-traverses for several works, $1,500.

HARBORS AND RIVERS.

Chicago harbor, Illinois.—The season had advanced to the 13th of June when the present superintendent resumed the charge of this work;

and since that time the operations have been confined chiefly to building up and finishing the work left unfinished at the close of the last year, and to opening a channel between the piers by dredging.

About 200 cords of stone have been thrown into the last 500 feet of the north pier, which will be levelled, planked, and completed this fall. The south pier, which was only laid in cribs to the surface of the water at the close of the last year, has been levelled and built up, throughout its entire length, to nearly its requisite height above water; more than 800 cords of stone have been thrown into it. One thousand six hundred and eighty feet in length of this pier will be completed this year.

The only new work commenced this season is 200 feet on the outer end of the south pier, and about the same length on the extension of the north pier in-shore.

The dredging machine has been kept in active operation, and has opened a good channel, 80 feet broad, along the inner side of the south pier, the least depth of water along which is ten feet; with a northerly wind, vessels have entered drawing 10 feet 10 inches.

In consequence of the remarkable position which the outer bar has assumed, a still further extension of the piers, of 200 feet beyond that contemplated last year, is rendered necessary. This will carry out the north pier to 14 feet water, a depth which it is supposed cannot, for many years, be materially lessened by the encroachment of the bars. The sand is constantly accumulating on the north side of the north pier, and will continue to do so till the piers are carried into the deep water of the lake, beyond its sensible influence. The extension here proposed will avert the evil for ten, or perhaps fifteen years.

Harbors on the south shore of Lake Erie.—For the present condition and wants of these harbors, reference is respectfully made to the accompanying reports of the superintendents, marked A and B.

Genesee river and Oak Orchard creek.—The state of these harbors is shown in the interesting report of the superintendent appended, marked C, to which I beg leave to refer.

A light is necessary at the extremity of the pier at the mouth of the Genesee, and it is recommended to construct there a permanent light-house, of good materials, to serve as a beacon for the entrance of the harbor, and to supersede, eventually, the old light-house on the main land, which is now in a state of decay. The plan and estimate for this have been transmitted to the proper officer of the Treasury.

Big Sodus bay and Oswego, Lake Ontario, N. Y.—The reports of the superintendents of these two improvements are also appended, marked D and E, as containing interesting detailed information.

Monument on Steele's ledge, Maine.—The unexpended balance of the appropriation for this monument was, at the last session of Congress, re-appropriated for "placing buoys in the vicinity of the monument."

The funds have been placed in the hands of an agent, but no report has yet been forwarded.

Breakwater on Stanford's ledge, Portland harbor.—A contract for 401 yards of the inner extremity of this breakwater was made in September, 1836; about 400 feet of this were laid last fall, and the whole is now nearly completed.

Two other contracts were made in the spring for 172 yards additional.

There will probably be completed this season a distance of 1,700 feet, containing 20,000 cubic yards of stone.

On account of the difficulty of measuring the mass under water, the remainder will probably not be done by contract, but the stone will be purchased and put in place by the Government.

The agent reports that the portion of the breakwater already constructed has been found efficacious in keeping off the heavy swell that formerly swept over the ledge at high water, and caused much damage to the shipping in the harbor.

Piers at Kennebunk, Maine.—The appropriation of July, 1836, for this work, retained until the present season, in consequence of the late period at which it became available, has been entirely expended.

The pier-head and a considerable portion of the pier proper are nearly completed.

Three hundred and sixty-five feet remain to be constructed, of which 100 should immediately be built, as the old pier is very weak, and will soon be washed away. An estimate for the amount will be submitted.

Deepening the channel of the Cocheco branch of the Piscataqua river, leading into Dover harbor, New Hampshire.—Operations commenced at a ledge of rocks, impeding the navigation, which has been blasted for a depth of about four feet, making a channel 36 feet wide for vessels of far greater burden than could before navigate the river.

They have been carried on also at Trickey's shoal, and at the narrows, where the remaining rocks have been raised from the bed of the river.

A quantity of sand has also been excavated. There are still several bars and masses of rock to be removed. Ten thousand dollars, in addition to existing balances of appropriation, will probably meet the expense of the completion of this improvement.

Merrimack river, Massachusetts.—The breakwater at the mouth of this river is finished, but it will require some slight repairs the next spring. Ample funds for this are now in the hands of the agent.

Breakwater at Sandy bay, Massachusetts.—Two hundred feet of this breakwater are finished, and two hundred more, with the exception of the facing on the inside; some progress has been made with the remainder. About 45,000 tons of stone have been deposited, and it is estimated that the same quantity will be required to finish the work. When completed, it will form a harbor accessible at all times of tide, and capable of sheltering more than five hundred sail of vessels.

Preservation of Rainsford island, Massachusetts.—A stone wall for the protection of this island has been built, 1,537 feet in length, about 7 feet thick, and from 7 to 12 feet high, protected in front by loose ballast stone. The appropriation has been expended to within about $500 now in the hands of the agent.

To complete the protection of the island, a portion of the wall, of 450 feet in length, will require two more courses of stone, with a pavement of flat stones in the rear. An estimate is herewith submitted.

Duxbury, Massachusetts.—To preserve the point of land designated by the act of appropriation, brush fences have been laid during the season, but no report of operations has been yet received.

Plymouth beach, Massachusetts.—A small remnant of appropriation has been expended this season in repairing the breakwater, and securing and putting in place the drift seaweed, to prevent the drifting of the sand.

The whole extent of Plymouth beach is represented to be now in fine condition; the brush fence is covered with five or six feet of sand, and a growth of beach grass. The wooden foundation sills of a portion of the breakwater having been nearly destroyed by the worms, an estimate for the amount necessary to replace a length of 320 feet, with a substantial stone wall, is herewith submitted.

Provincetown harbor, Massachusetts.—About 220 acres of beach have been planted with grass this year, and the estimate submitted is for the same quantity the next season. The grass grows well, and the protection of the beach will be accomplished, with the necessary appropriations, in 1840.

Hyannis breakwater, Massachusetts.—The eastern end of the breakwater is finished to a length of about 1,140 feet. There remain now but 200 feet at the western end to complete it, an estimate for which will be submitted.

The first proposed height of the breakwater having been found insufficient for security, an additional course of heavy stones has been laid on the latest constructed portions, and it is contemplated to raise the whole in a similar manner. The eastern extremity has been arranged to receive a beacon-light, in anticipation of an appropriation for that object. The work has already proved to be a great auxiliary to the safety of this very important harbor.

Breakwater at the mouth of Bass river.—Of this work, 50 feet in length have been completed this season, 30 feet are in a state of forwardness, and material for 10 feet more is at hand, and will be deposited. The balance of the appropriation will be sufficient for about 18 feet more, making a total length of 108 feet.

The cost of the linear foot of this work is greater than was originally estimated, in consequence of a misapprehension as to the kind of stone to be used, and the increase in its price. Ten thousand dollars can be advantageously expended the next season, and $30,000, it is now expected, will complete the work.

An idea of the importance of this harbor may be formed from the fact of there being 223 arrivals of vessels from September 10th to October 9th, inclusive.

New Bedford harbor, Massachusetts.—The removal of the wreck in this harbor has been effected.

Breakwater at Church's cove, Little Compton, Rhode Island.—Owing to the difficulty of obtaining a deed of the land and privilege of removing the stones necessary for its prosecution, this work was not commenced as early as was anticipated; and after its commencement, heavy winds and sea, and a want of shelter for the vessels transporting stone, prevented its being carried on as rapidly as might have been expected; but these difficulties are in part obviated by its present advanced state, which already affords some security for vessels and scows employed in its construction. Much more, it is hoped, can be accomplished the next year. By the end of October, as stated in the report of the superintendent, there

were to have been completed 100 feet in length, requiring 5,246 tons of stone. To complete the work according to the plan proposed, 22,000 tons of stone, at a cost of $26,767, will be required. In consequence of the increased price of stone, the present estimate for completion will exceed the original one about $7,200. Vessels that are now driven by stress of weather up the eastern channel of the Narragansett bay, are obliged to run several miles above this place to find safe anchorage; the delay and danger attending this will be obviated by the breakwater, which will afford ample security.

Thames river, Connecticut.—In 1836 two piers were constructed on the east side of this river, one of which is 1,500 feet long; the two containing 3,036 cubic yards of stone. During the present season two others have been constructed on the same side, having an aggregate length of 870 feet, and requiring 2,822 cubic yards of stone; also, two on the west side, with an aggregate length of 1,100 feet, and requiring 3,444 cubic yards of stone.

Two dredging machines have been employed, and have deepened the channel across the bar call the Haycocks, through a length of 930 feet, and a width of 60 feet.

The superintendent judges, from the effects already produced, that the success of the project for improving the harbor does not admit of a doubt.

Saybrook harbor, Connecticut.—The season was so much advanced when the local agent received the necessary plan and instructions for the contemplated improvement at the mouth of Connecticut river, as to render it inexpedient, in his judgment, to commence operations this year. It was concluded, therefore, to make the necessary preparations, during the winter, to commence at as early a period in the spring as the weather will permit.

Bridgeport harbor, Connecticut.—A channel of 8 feet in depth has been excavated nearly across the outer bar that formerly closed the entrance to this harbor, at low tides, to vessels drawing more than 5 feet water.

The agent reports the probability that the channel will be kept open by the current, as it is now deeper than when first made.

Fairweather island, Connecticut.—Three hundred and sixty feet of the sea-wall for the preservation of this island have been finished this season. The ends of it will be exposed to injury from every gale, until the whole is completed, which renders an early appropriation desirable. Five hundred feet in length remain to be built.

In order to secure the harbor, the old breakwater should also be repaired. Storms are now washing it away and filling up the harbor.

Southport harbor, Connecticut.—The stone wall for the preservation of the dike has been completed, and, in the opinion of the local agent, will fulfil its purpose. A small sum has been expended upon the breakwater, which is represented as being now strong and permanent. A prolongation of this breakwater is recommended as necessary; to effect which, an estimate will be submitted.

Harbor of Westport, and beach at Cedar point, Connecticut.—The stone wall on Cedar point is in a state of rapid advancement, and will, in

all probability, be completed in November, affording complete security to that point, and requiring no further aid from the Government.

Owing to unexpected delays, the canal through the "Great Marsh," which it was anticipated might be finished the present season, cannot be completed before the early part of next summer.

A small additional appropriation of $770 will be required to secure the work now under construction.

Hudson river, New York.—The operations of the season for improving the navigation of this river near Albany, the present state of the work, and the projected alterations in the plan, are fully detailed in the report of the superintendent, which is appended, marked F.

Icebreaker on Staten island, New York.—In consequence of a series of failures on the part of the contractors, but little had been accomplished on this work to the date of the report of the superintendent, (October 28th, 1837.) A contract made last fall, to construct all the stone piers by this spring, was not complied with; another contract was made early in June for the same, with a proviso that either party might withdraw after the completion of one pier; of this proviso the contractor availed himself. An engagement, made late in June with another party, failed through some alleged misapprehension, was renewed in August, and failed again in September, through the bad faith of the contractor.

Another engagement has been entered into, and it is now probable that all the stone for the piers will be delivered in the course of November, and the whole eleven piers and the remainder of the piling be finished this year.

New Brunswick harbor, New Jersey.—For the operations of this year in the improvement of this harbor, I beg leave to refer to the accompanying report of the local engineer, marked G.

Little Egg Harbor, New Jersey.—The appropriation for this work has been expended, with the exception of a small balance; and the protection afforded to Tucker's island, which covers the harbor, is, so far, satisfactory. The improvements were conducted upon the general features of the plan reported to the department, with some slight modification, dictated by the experience of the skilful engineer who superintended them. In addition to the brush fence parallel to the shore, he has constructed breakwaters, projecting from high-water mark to low water, 800 feet apart.

The effect of these has been, not only to prevent the previous abrasion of the beach, but to cause a deposite of sand between high and low water mark of at least a foot in depth, and a consequent extension into the sea. For any further information, I have the honor to refer to the detailed report of the superintendent, already submitted, in answer to a call of the House of Representatives.

Chester harbor, Pennsylvania.—The improvement of this harbor was continued last fall by replacing the defective wood work of the two northern piers and their connecting bridges and mooring posts, until the funds were exhausted.

The appropriation of $2,000 of March last has been applied to taking down and renewing the sustaining walls of the southern causeway, for a distance of 150 feet; to repairing other parts of it; and to filling in all the wharves, and covering them and the causeways with broken stone.

This useful harbor is now in as good order as the nature of the case permits.

Wilmington harbor, Delaware.—The improvement of this harbor, as mentioned in my last report, it was determined to restrict to blasting and dredging.

In August and September last, the steam dredging apparatus, with its accompanying lighters, cranes, &c., was put in operation, and found to be well adapted to its purpose. Up to the 30th September 5,000 cubic yards of mud had been removed from the bed of the river and deposited over the dikes along its margin. The estimate for continuing this work the next year embraces the residue of the sum called for by the original estimate of Major Bache. After the expenditure of this, the future estimates may be better determined from the ascertained effects of the present system.

Harbor of Newcastle, Delaware.—The pier for sheltering vessels from drifting ice, referred to in the last annual report, was sunk before the close of operations in the fall, and, even in its unfinished state, was found useful in protecting much valuable property from the drift ice during the winter.

The funds available for this season not being sufficient to effect the entire contemplated improvement, the superintendent determined to adopt such course as would secure to the harbor the greatest immediate advantage.

Instead, therefore, of finishing the first pier, he concluded to deposite the stone upon it in such a way as to secure uniformity of settling, and, leaving it in this condition, to apply the residue of the funds to putting a second pier in the same state and to removing some obstructions that prevented the entrance of the current into the harbor. The result of this arrangement has been, that a safe harbor now exists for as many vessels as are likely to seek shelter here, though in an unfinished state.

Delaware breakwater, Delaware bay.—The officer in charge of this work has not yet been able to furnish a minute account of the present condition of this work, or of the artificial harbor formed by it.

The following facts are, however, extracted from his short memoir, showing generally what has been done and what is yet required :

"The quantity of stone received at the breakwater during the year was 54,766$\frac{14}{20}$ tons, the whole of which was from the Trappean quarries, in Delaware, and such as I have judged the best for the work. It has been deposited on the breakwater and icebreaker, raising each of these works on their entire length some feet above high water, thereby increasing the capacity of the harbor to the extent to which it is susceptible until the works are prolonged : a portion of each of these works has been raised to the required height. I can discover no change or alteration in the shoals or bottom of the harbor, or about it, during the past year, in any way calculated to affect it as a safe harbor, or differing in the least from former surveys.

"The capacity of the harbor does not keep pace with the necessities and wants of the coasting and foreign trade. At times, vessels are so numerous in the harbor as to run foul of and injure each other considerably during the continuance of gales; and some have this season gone

ashore for want of shelter under the lee of the works, being compelled to anchor in the seaway near the ends of the work.

"The continued utility of the work is exhibited by the annexed table, giving the number of days' security afforded to vessels annually, from the first season of shelter being formed to the 30th September, 1837.

	Ships.	Brigs.	Schooners.	Pilot boats.	Sloops.	Total.
From Sept. 30, 1833, to Sept. 30, 1834,	48	332	735	363	351	1,829
The year ending 30th September, 1835,	111	496	1,176	563	427	2,773
Do. ending 1836,	306	1,028	2,923	759	604	5,620
Do. do. 1837,	226	576	2,933	754	610	5,099
	691	2,432	7,767	2,439	1,992	15,321

"The wharf or pier that was required to be built from the beach within this harbor has been finished, and some icebreakers, to guard it from drifting ice, partially finished. No use has been made of this wharf up to the end of October, except by one pilot-boat making fast to it for a short period: a plan of its construction is forwarded."

Mooring buoys in the harbor of Delaware breakwater.—An appropriation of $2,000 was made at the last session of Congress for placing mooring buoys in the harbor formed by the Delaware breakwater. Three wooden buoys, covered with zinc, of sufficient size and buoyancy to support two men, have been placed in the safest parts of the harbor: they are secured by an inch and a half chain cable to mushroom anchors, weighing each 5,000 pounds. The weight is calculated for the largest class of merchant vessels, and will serve even for a small frigate. The buoys have been made of different shapes, to test their relative advantages in the tide-way and during the period of drifting ice. Their greatest usefulness will be during the winter, but they have already been the means of saving from inevitable destruction one vessel that broke from her moorings.

Harbor of Baltimore, Maryland.—The dredging of this harbor has been prosecuted with energy, and the appropriation exhausted. This operation must necessarily be continuous, and, for its furtherance the next year, the sum of $25,000 will be asked.

Improvement of the debouches of the Dismal Swamp canal.—At the southern extremity, a dredging machine has been employed, since August, at the junction of Joyce's creek and the Pasquotank. Laborers are also employed cutting off some of the most prominent points of land on the creek, with a view of straightening the channel, relieving the current, and making room for vessels to pass in narrow places. This portion of the work will require another year to complete it, as a large force cannot be employed to advantage: when done, the navigation will be very good, and, it is supposed, will remain so.

At the northern extremity of the canal, a channel of ten feet in depth was obtained in Deep creek, by dredging; but the bottom, which is of sand, has again filled up to within a foot of its former height, proving that no permanent improvement can be effected in this way.

This can probably only be accomplished by a lock and dam, as recommended in 1829, at a cost of about $27,000.

The Dismal Swamp canal is an important link in the line of inland water communication, as it connects the sounds of the Carolinas with the Chesapeake bay.

Ocracoke inlet, North Carolina.—The jettee recommended in 1835 was commenced in March last, and nearly completed, when a gale in August injured it to such a degree that it was thought inexpedient to proceed with the work.

The depth of water on the shoal to the northwest of the jettee has increased about 18 inches; and it is probable that the jettee, in its present state, may have very beneficial effects.

The local engineer remarks, that the changes which are continually taking place in the navigation of this inlet may, at some future time, present an opportunity of permanently improving it, at a comparatively small expense: for the present, however, he entertains the belief that no immediate benefit can be looked for, and he accordingly recommends a cessation of the work.

Pamlico river, North Carolina.—Towards the close of November last, the dredging was progressing satisfactorily, and before the end of December there would have been a channel fifty yards wide and eight feet deep; but on the 30th November the operations were interrupted by the burning of the boat, supposed, after a careful investigation, to be the work of an incendiary. This boat was transferred from the Ocracoke inlet improvement.

Should it be determined to prosecute the work in Pamlico river, the appropriation must cover the cost of another boat, as well as provide for the labor of dredging: the estimate will be made with this view.

New river and Core sound, North Carolina.—An act was passed at the last session of Congress, appropriating $20,000 "for the improvement of the navigation of New river and Core sound." The necessary preliminary survey of New river has lately been finished, and it is judged, by the officer in charge, expedient to confine his operations for its improvement simply to dredging. A beating channel will be necessary, and it is proposed to excavate one 200 yards wide, to a depth of seven feet at high water; for this 400,000 cubic yards must be removed, at an estimated cost of $62,500. It is supposed that this improvement will be comparatively permanent, and the amelioration of the navigation relieve the inhabitants of Onslow county alone of an annual transportation tax of $8,000. A dredging boat has been constructed; for the operation of which the ensuing year, the appropriation already made will suffice.

No survey of the Core sound was made by the engineer to whom the charge of its improvement will be intrusted, as one was already in progress by a brigade of topographical engineers. A copy of the map of this survey will be supplied him as early as possible, with instructions to report a plan of improvement based thereon.

Savannah river, Georgia.—There having been no action in the Legislature of South Carolina relative to the contemplated obstruction between Hutchinson's and Argyle's islands, the operations on this river have, this season, been confined to dredging.

Eleven thousand two hundred and thirty-two cubic yards of mud and sand have been removed, widening the channel, and giving it an average increased depth of about one foot. A new steamer, to replace the "Essayons," taken away for service in Florida, is now under contract, and will probably be finished by the close of the present month.

Brunswick harbor, Georgia.—No officer being disposable, nothing has this year been done for the improvement of this harbor.

Improvement of the inland navigation between St. Mary's and St. John's, Florida.—During the last season, the dredge-boat has been employed in cutting a channel through the oyster banks between the Sisters, near the St. John's river. The channel is now completed to a length of $680 feet, and is 70 feet broad, and 3 feet deep at ordinary low water: 2,990 cubic yards have been excavated. To open the navigation throughout, there are yet to be dredged, at the Amelia dividings, about 500 yards in length, and, at the Talbot dividings, 1,400 yards. As most of this excavation is from a bottom bare at low water, and can only be carried on when the dredge floats, the operation is necessarily very slow.

From these considerations—of the extent of the work, slowness of operations, and great and increasing importance of this pass, the construction of an additional dredge is recommended, the cost of which is included in the estimate of next year.

Appalachicola, Florida.—The application of the appropriation of $10,000 for removing a shoal called the "Bulkhead," in this harbor, has been intrusted to the intendent and council of the city of Appalachicola; and it is believed that arrangements will be made by which the intended improvement will be speedily commenced. An estimate for its prosecution will be submitted, should it be deemed advisable, after information is obtained of the practicability of removing the existing obstructions.

Mobile harbor, Alabama.—A contract was entered into on the 9th of October, 1836, for dredging the Choctaw pass; but, in consequence of the delay of the contractor to commence operations, it was annulled in June, 1837, and a contract made with another individual, the execution of which will probably commence by the first of December next, and be prosecuted without further delay.

Preparations are also now making for the vigorous prosecution of the dredging of the Dog-river bar.

Pascagoula river, Mississippi.—The attempt to improve the channel of this river by dredging having been attended with no beneficial results, some portions filling up nearly as fast as excavated, operations have been suspended, and the balance of funds passed to the credit of the Treasurer of the United States.

Red river, Louisiana.—The annexed report of the agent charged with the removal of the great raft, marked H, shows that there now remain but 440 yards of this obstruction. An early appropriation, sufficient to cut away this, is very desirable, on the score both of economy and of immediate great public benefit. The report of the officer of en-

gineers appointed to inspect the operations on this river is also appended, marked H No. 1.

Ohio and Mississippi rivers below the falls of the Ohio, and the Arkansas river.—The reports of the superintendent of these improvements are also appended, marked I and K, together with the inspection report marked I No. 2, with the estimate for further prosecution.

Ohio river above the falls.—The report of the officer charged with the improvement of this portion of the Ohio is appended, marked L, giving a detailed account of the operations during the year, and of the further improvements proposed.

Cumberland river.—For an account of the work performed during the past season for the improvement of this river, I would respectfully refer to the reports of the local agent, marked M and N.

Pier in the Mississippi river near St. Louis.—An officer of engineers was intrusted with the execution of this work and of several others in August last. It has not yet been commenced, as his time to the present date has been entirely occupied with the necessary preliminary surveys; a matured plan is not yet submitted for this reason, but the amount now available being, in his judgment, sufficient for the operations of the next year, no appropriation will be asked for.

Mississippi river above the mouth of the Ohio, and the Missouri river.—The officer charged with the last named improvement has also the superintendence of this; and for the reason there mentioned, has been enabled only to make minute surveys of several of the most important points, and preparations for a vigorous prosecution of the work early in the spring.

Examinations have been made of the Rock river and Des Moines rapids of the Mississippi, which will be among the first objects of attention.

Time has not allowed an examination of the Missouri.

Deepening the mouths of the Mississippi.—Three several plans for accomplishing this object were submitted by the officer to whom the execution is to be intrusted: 1st, closing all but one of the passes at the point where they leave the main trunk of the river; 2d, cutting a ship canal from the river; 3d, deepening, by steam-dredging machines, one or more passes.

The first two projects being deemed costly, uncertain in their issue, and requiring a greater period of time than the other, it has been determined to adopt the latter, so far as to test the advantages that may be derived, before determining on any other involving hazard and great expenses. The operations have, therefore, been limited to the construction of a steam dredge, the boat to be of 282 tons burden, with a high-pressure engine, which will propel the boat and work the machinery.

Four vessels are also to be built, to receive the excavation, and are expected to be ready by the 15th of December.

In consequence, however, of the great interest felt in this work by the city of New Orleans, and in order to allay any apprehensions that the proper attention had not been bestowed upon it, the department, willing to subject all the different plans that have been proposed to the severest scrutiny, has now laid the whole matter, with all the information in its possession, before a board of engineers

This board will issue minute instructions to the local superintendent concerning an examination to be made by him of the whole delta of the Mississippi; upon the report of which examination they are to base a project for this highly important improvement.

Survey of the Sabine river.—In fulfilment of your instructions of April last, directions were given to Captain H. M. Shreve to examine the upper part of the Sabine, whilst Captain Chase, of the engineers, should cause a survey to be made of the lower part. The duties of the first-named gentleman not allowing him the necessary time, the examination was made by an officer of the line of the army, and submitted to the Major General. A survey of the mouth, ordered by Captain Chase, was made in April last.

From his report, it appears that the debouche of the Sabine is into a lake about twelve miles long and twenty broad, which is connected by a pass with the Gulf.

The obstructions to the navigation of this river are: 1st, bars at the head and mouth of the pass, and shoals in the pass; 2d, the shoalness of the water of the lake; 3d, bars at the debouche of the river into the lake; 4th, two rafts about one hundred miles up the river, very loose, composed merely of logs on the surface of the water.

The result of the survey shows, 1st, that vessels of seven feet draught can ascend the pass to its head; 2d, vessels of five feet draught can cross into the lake, and approach to within a mile of the mouth of the river; and, 3d, vessels of four feet draught can cross the bar at the debouche of the river into the lake. After passing this bar, eighteen feet of water can be carried a great distance up the river. The soundings, however, about the mouth of this river, are subject to very great changes from the winds, tides, freshets, &c. Every heavy gale alters, in some degree, the direction and depth of the channel.

Ten years ago, *twelve* feet water could be brought into the pass, and, at a later period, only *five*, where there are now seven. The river could, no doubt, be advantageously improved.

LIGHT-HOUSES AND BEACON-LIGHTS.

Lakes Erie and Ontario.—For the condition of the light-houses and beacons along the south shores of Lakes Erie and Ontario, the construction of which has been committed to this department, I would respectfully refer to the several reports of the superintendents of the public works at those places, which are appended hereto, marked A, D, and E.

Pier, dike, and light-house, at Goat island.—The pier on which the light-house is to rest was commenced early in the spring; its walls, ten and eight feet thick, are built up to low water of cobble work, and the interior filled with boulder-stones; the superstructure of the walls is of regular masonry, faced with granite laid in hydraulic mortar, and is nearly completed. The foundation of the light-house is also in a state of forwardness.

Operations for the season were to close with the finishing of the pier.

It is proposed by the local engineer to collect this winter sufficient materials to complete the light-house early next summer, and to apply the balance of the amount appropriated to the construction of the dike.

Light-house on Flynn's Knoll, (near Sandy Hook.)—The plan for

this important work is not yet thoroughly matured; the project has been laid before a board of engineers for consideration.

The officer charged with the construction will make every preparation during the winter to commence it as early in the spring as the weather will permit.

ROADS.

Roads from Detroit to Fort Gratiot, and to the mouth of Grand river.—No appropriation was made for either of these roads at the last session of Congress. Some slight repairs have been made on the last named, with the small unexpended balance. The arrearages for labor on the Fort Gratiot road, referred to in my last report, are still due, as the balance of a former appropriation, carried to the surplus fund, has not yet been reappropriated, as there recommended. An estimate to liquidate the same will be submitted.

Roads from Detroit to Chicago; from Sheldon's to the mouth of the river St. Joseph's; from Clinton to Grand river rapids; from Niles's to the mouth of the St. Joseph's; and from Detroit to Saginaw.—These roads have been inspected by Lieutenant Colonel Pierce, of the first artillery; and several reports, marked O, are herewith submitted, showing their present condition and the funds necessary for their repair and completion.

Road from La Plaisance bay to the Detroit and Chicago road.—For particular information relating to this road, I would respectfully refer to the report marked A, of the superintendent. It appears from this, that the road is now almost impassable in places. An estimate for the amount to complete it, and to meet the existing liabilities, is submitted.

Road from Memphis to the St. Francis river.—The report of the superintendent of this road is also appended, marked P.

Cumberland road.—For your information respecting this great national avenue, the reports of the several superintendents are hereto appended, marked Q, R, and S.

Military Academy.—The present condition of this institution is shown in the annual report of the Board of Visiters herewith, marked T. The wants of the institution are there fully set forth, and to them I would respectfully urge your attention.

Sites for fortifications on Lake Champlain, and for a fort on the Gulf coast of Mississippi.—No reports have been yet received of the surveys for determining either of these sites; as soon as received, the project of defence will be put in train of preparation, and submitted as soon as matured.

Defence of the Western frontier.—For the project proposed for this important object, I have the honor to refer you to my report of the 31st October last, furnished in obedience to a call of the House of Representatives.

Waters of Lake Erie.—The minute examination of the shores of Lake Erie, necessary to ascertain if the works at Black Rock have raised the level of its waters, and called for by a resolution of the Senate of March 2d, 1837, has not been commenced, in consequence of a want of funds. An estimate for the necessary amount will be submitted.

OFFICE OF THE CHIEF ENGINEER.

I have the honor again earnestly to call the attention of the Secretary to the insufficiency of numbers in the corps of engineers, for a proper performance of the duties imposed upon them.

In consequence of a want of officers, many important works referred to in this report have been intrusted entirely to the care of civil agents, and others to their immediate charge, under a general superintendence of an officer. This latter course, frequently rendered necessary by the number of works under this department, and the impossibility of procuring capable civil agents, imposes upon each officer the most constant and unremitted labor, while, at the same time, it is impossible that each work can receive from him more than an occasional inspection. To say nothing of the advantage of securing to each of our important national undertakings the personal superintendence of a competent engineer, and the faithful and economical application of the public funds, the increase of the corps of engineers would be attended with a direct economy considered solely with reference to their pay as public agents. I have, therefore, the honor to reiterate my recommendations of several past years, that the corps of engineers be increased to double its present number, as that is the least force with which operations can properly be carried on.

All of which is respectfully submitted.

C. GRATIOT, *Chief Engineer.*

DOCUMENTS

ACCOMPANYING

THE REPORT FROM THE CHIEF ENGINEER.

No. 1.

Statement exhibiting the fiscal concerns of the Engineer Department, for the year ending the 30th September, 1837, in which the funds that had accrued within that period, and the manner of accruing, are stated and accounted for, by showing their application.

Designation of the works.	Available for 1837, and whence derived.			Amount available accounted for.			
	From appropriations for 1837.	From balances remaining in Treasury, and in the hands of agents, on 30th of September, 1836.	Aggregate available.	Amount applied, corresponding with the amount of accounts rendered to the 30th Sept. 1837.	Amount undrawn from the Treasury, 30th September, 1837.	Balances in the hands of agents, 30th September, 1837.	Aggregate accounted for, corresponding with the amount available for 1837.
FORTIFICATIONS.							
Fort Warren - - - -	-	$182,684 55	$182,684 55	$154,318 86	$19,600 00	$8,765 69	$182,684 55
Preservation of Castle Island, and repair of Fort Independence - - -	-	98,267 77	98,267 77	68,833 45	5,500 00	23,934 32	98,267 77
Fort Adams - - - -	-	136,160 70	196,160 70	149,362 79	37,000 00	9,797 91	196,160 70
" transfer'd from Fort Monroe	$60,000 00	-					
Fort Schuyler - - - -	-	203,935 46	203,935 46	103,514 85	95,000 00	5,420 61	203,935 46
Repairs of Fort Columbus and Castle Williams - - - - -	-	21,021 43	21,021 43	19,461 03	-	1,560 40	21,021 45
Repairs at Fort Lafayette - - -	-	1,780 15	1,780 15	-	-	1,780 15	1,780 13
Fort Hamilton - - - -	-	1,156 12	1,156 12	-	-	1,156 12	1,156 12
Purchase of land and right of way at Throg's Point - - - -	-	2,000 00	2,000 00	2,000 00	-	-	2,000 00
Fort Delaware - - - -	-	128,572 41	164,572 41	80,438 00	57,680 00	26,453 71	164,572 41
Fort Delaware, transferred from fortifications Charleston harbor - - -	36,000 00	-					

Fort McHenry, redoubt Wood, and Covington battery	-	48,668 10	48,668 10	48,668 10	-	-	48,668 10
Fort Monroe, $150,000.*							
Fort Calhoun	-	141,108 59	141,108 59	125,755 01	12,200 00	3,153 58	141,108 59
Fort Caswell	-	58,688 72	58,688 72	38,083 88	14,800 00	5,804 84	58,688 72
Fort Pulaski	-	139,087 69	229,087 69	133,911 34	64,070 59	31,105 76	229,087 69
Fort Pulaski, transferred from Fort Monroe	90,000 00	-					
Fortifications in Charleston harbor, and preservation of the site of Fort Moultrie†	-	53,388 72	53,388 72	17,213 74	29,190 62	6,984 36	53,388 72
Fort Morgan	-	789 17	789 17	-	-	789 17	789 17
Repairs at Fort Marion, and the sea-wall at St. Augustine	-	51,088 55	51,088 55	37,636 47	12,638 55	813 53	51,088 55
Fort Pickens	-	3,439 13	3,430 13	1,511 75	-	1,927 38	3,439 13
Fort at Foster's bank, Pensacola	-	6 86	27,006 86	27,006 86	-	-	27,006 86
Do. transferred from Charleston harbor	27,000 00	-					
Fort Jackson	-	733 71	733 71	-	-	733 71	733 31
Fort at Grande Terre, Louisiana	-	53,769 59	53,769 59	1,095 80	15,000 00	37,673 79	53,769 59
Incidental expenses attending repairs of fortifications, and for the purchase of additional land in their neighborhood	-	49,472 66	81,472 66	54,095 56	12,865 00	14,512 10	81,472 66
Do. do.; transferred from fortifications Charleston harbor	32,000 00	-					
Contingencies of fortifications	-	8,412 14	11,535 45	1,771 46	3,287 49	6,476 50	11,535 45
Do. do.; transferred from fortifications Charleston harbor	1,900 00	-					
Do. do.; transferred from Fort Pickens	1,223 31	-					
Dollars	248,123 31	1,384,232 22	1,632,355 53	1,064,679 65	378,832 25	188,843 63	1,632,355 53
ROADS.							
Road from Detroit to Saginaw bay	-	3,661 95	3,661 95	2,032 76	-	1,629 19	3,661 95
Road from Detroit to Fort Gratiot	-	31 88	31 88	-	-	31 88	31 88
Road from Detroit to Grand river	-	5,353 97	5,353 97	3,476 77	-	1,877 20	5,353 97
Road from Detroit towards Chicago	-	4,461 28	4,461 28	3,692 22	-	769 06	4,461 28

*$60,000 transferred to Fort Adams; $90,000 transferred to Fort Pulaski.

†$36,000 transfr'd to Fort Delaware; $27,000 transfr'd to fort on Foster's bank; $32,000 transfr'd to incidental, &c.; $1,900 transfr'd to contingencies.

STATEMENT No. 1—Continued.

Designation of the works.	Available for 1837, and whence derived.			Amount available accounted for.			
	From appropriations for 1837.	From balances remaining in Treasury, and in the hands of agents, on 30th September, 1836.	Aggregate available.	Amount applied, corresponding with the amount of accounts rendered to 30th September, 1837.	Amount undrawn from the Treasury, 30th September, 1837.	Balances in the hands of of agents, 30th September, 1837.	Aggregate accounted for, corresponding with the amount available for 1837.
ROADS.							
Road from La Plaisance bay to the Chicago road	-	$1,915 42	$1,915 42	$1,915 42	-	-	$1,915 42
Road from Sheldon's, on the Chicago road, to St. Joseph's river	-	1,107 58	1,107 58	733 15	-	$374 43	1,107 58
Road from Clinton, on the Chicago road, to the rapids of Grand river	-	721 47	721 47	216 77	-	504 70	721 47
Road between Niles's and the mouth of St. Joseph's river	-	2,979 97	2,979 97	2,410 90	-	569 07	2,979 97
Cumberland road in Illinois	$100,000 00	169,795 21	269,795 21	57,570 94	$161,547 34	50,676 93	269,795 21
Cumberland road in Indiana	100,000 00	189,225 17	289,225 17	173,542 12	83,960 00	31,723 05	289,225 17
Cumberland road in Ohio	190,000 00	106,043 98	296,043 98	234,798 37	50,508 17	10,737 44	296,043 98
Cumberland road east of the Ohio river	7,183 63	32,095 23	39,278 86	39,047 20	-	231 66	39,278 86
Road from opposite Memphis, on the Mississippi river, to the St. Francis river	-	133,733 25	133,733 25	55,459 24	26,000 00	52,274 01	133,733 25
Dollars	397,183 63	651,126 36	1,048,309 99	574,895 86	322,015 51	151,398 62	1,048,309 99

Improving the harbor of Chicago	$40,000 00	$19,718 79	$59,718 79	$48,262 29	$4,200 00	$7,256 50	$59,718 79
Works at the harbor near the mouth of the river Raisin	30,000 00	4,800 99	34,800 99	26,068 23	1,500 00	7,232 76	34,800 99
Removing obstructions at Huron river	2,565 00	5,565 34	8,130 34	6,397 85	1,687 73	44 76	8,130 34
Removing obstructions at Black river	6,410 00	4,445 21	10,855 21	8,921 65	-	1,933 56	10,855 21
Improving Cleaveland harbor	10,000 00	11,184 22	21,184 22	17,947 13	-	3,237 09	21,184 22
Removing obstructions at Grand river	-	8,056 57	8,056 57	7,012 73	-	1,043 84	8,056 57
Piers at La Plaisance bay	-	82 12	82 12	-	-	82 12	82 12
Removing obstructions at Cunningham cr'k	5,000 00	113 62	5,113 62	4,539 94	-	573 68	5,113 62
Removing obstructions at Ashtabula creek	8,000 00	1,679 74	9,679 74	5,708 30	-	3,971 44	9,679 74
Removing obstructions at Conneaut creek	5,000 00	1,730 37	6,730 37	6,149 41	-	580 96	6,730 37
Improving the harbor of Presque Isle	15,000 00	5,966 47	20,966 47	20,259 65	-	706 82	20,966 47
Improvements at Dunkirk harbor	15,000 00	7,869 55	22,869 55	21,002 40	-	1,867 15	22,869 55
Works at Buffalo	-	1,221 68	1,221 68	683 84	-	537 84	1,221 68
Improvement at Black Rock harbor	-	850 00	850 00	545 94	-	304 06	850 00
Dredging machine for Lake Erie	-	14,452 87	14,452 87	10,982 00	-	3,470 87	14,452 87
Improving the harbor at the mouth of Oak Orchard creek	5,000 00	2,173 86	7,173 86	2,538 67	1,000 00	3,635 19	7,173 86
Works at the mouth of Genesee river	10,000 00	15,135 77	25,135 77	18,157 81	4,900 00	2,077 96	25,135 77
Improvement of Big Sodus bay	12,000 00	9,164 42	21,164 42	19,164 42	2,000 00	-	21,164 42
Pier and mole at Oswego	15,000 00	17,632 37	32,632 37	24,371 80	1,200 00	7,060 57	32,632 37
Placing buoys in the vicinity of the monument on Steele's ledge	466 00	164 78	630 78	-	-	630 78	630 78
Breakwater at Stanford's ledge, Portland harbor	25,000 00	10,000 00	35,000 00	23,907 55	-	11,092 45	35,000 00
Piers at Kennebeck river	3,000 00	4,498 32	7,498 32	3,023 90	-	4,474 42	7,498 32
Deepening the channel of the Cocheco branch of the Piscataqua river leading into Dover harbor	5,000 00	3,080 76	8,080 76	4,346 34	2,700 00	1,034 42	8,080 76
Breakwater at the mouth of Merrimack river	-	4,060 81	4,060 81	75 60	-	3,985 21	4,060 81
Breakwater at Sandy bay	20,000 00	6,449 95	26,449 95	18,772 26	-	7,677 69	26,449 95
Preservation of Deer island, Boston harbor	-	1,130 00	1,130 00	976 32	-	153 68	1,130 00
Preservation of Rainsford island, Boston harbor	-	15,000 00	15,000 00	-	-	15,000 00	15,000 00

STATEMENT No. 1—Continued.

Designation of the works.	Available for 1837, and whence derived.			Amount available accounted for.			
	From appropriations for 1837.	From balances remaining in Treasury, and in the hands of agents, on 30th September, 1836.	Aggregate available.	Amount applied, corresponding with the amount of accounts rendered to the 30th September, 1837.	Amount undrawn from the Treasury, 30th September, 1837.	Balances in the hands of agents, 30th September, 1837.	Aggregate accounted for, corresponding with the amount available for 1837.
IMPROVEMENT OF HARBORS, RIVERS, &c.							
Preserving the point of land leading to the fort and light-house at the Gurnet, in Duxbury, Massachusetts	-	$5,096 86	$5,096 86	$2,147 14	$500 00	$2,449 72	$5,096 86
Preservation of Plymouth beach	-	431 08	431 08	269 50	-	161 58	431 08
Preservation of Provincetown harbor	-	4,572 31	4,572 31	4,481 22	-	91 09	4,572 31
Improvement of the harbor at the mouth of Bass river	-	10,000 00	10,000 00	6,970 00	3,030 00	-	10,000 00
Breakwater at Hyannis harbor	$5,000 00	719 12	5,719 12	4,885 06	-	834 06	5,719 12
Removing the wreck in New Bedford harbor	-	10,144 69	10,144 69	2,453 32	7,500 00	191 37	10,144 69
Breakwater at Church's cove	-	10,000 00	10,000 00	3,979 62	3,488 00	2,532 38	10,000 00
Deepening the channel of the river Thames, leading into Norwich harbor	20,000 00	5,514 02	25,514 02	20,815 11	4,000 00	698 91	25,514 02
Improving the harbor of Saybrook	-	20,000 00	20,000 00	-	20,000 00	-	20,000 00
Deepening the channel leading into Bridgeport harbor	-	10,000 00	10,000 00	8,858 00	-	1,142 00	10,000 00
Sea-wall to preserve Fairweather island, near Black Rock harbor	-	10,000 00	10,000 00	9,674 48	-	325 52	10,000 00

Harbor of Southport	1,000 00	1,046 14	2,046 14	2,046 14	-	-	2,046 14
Improving the harbor of Westport	3,734 00	3,000 00	6,734 00	2,591 62	2,734 00	1,408 38	6,734 00
Securing the beach at Cedar point	-	1,000 00	1,000 00	400 00	500 00	100 00	1,000 00
Icebreaker at Staten island	-	19,500 00	19,500 00	2,920 29	9,500 00	7,079 71	19,500 00
Improving the navigation of Hudson river	100,000 00	57,147 87	157,147 87	133,336 38	3,692 00	20,119 49	157,147 87
Improving the harbor of New Brunswick	6,963 00	7,000 00	13,963 00	5,048 30	6,963 00	1,951 70	13,963 00
Improving Little Egg harbor	-	5,000 00	5,000 00	3,148 04	-	1,851 96	5,000 00
Removing a shoal in the river Delaware, near Fort Mifflin	-	15,000 00	15,000 00	13 80	14,986 00	-	15,000 00
Repairs at the harbor of Chester	2,000 00	1,762 45	3,762 45	3,307 17	-	455 28	3,762 45
Improving the harbor of Wilmington	8,000 00	15,000 00	23,000 00	15,981 30	6,000 00	1,018 70	23,000 00
Improving the harbor of Newcastle	10,000 00	17,402 75	27,402 75	24,235 93	3,000 00	166 82	27,402 75
Delaware breakwater	141,000 00	91,930 55	232,930 55	177,279 88	11,600 00	44,050 67	232,930 55
Mooring buoys in the harbor of the Delaware breakwater	2,000 00	-	2,000 00	1,793 56	-	206 44	2,000 00
Deepening the harbor of Baltimore	15,000 00	10,283 00	25,283 00	25,138 12	-	144 88	25,283 00
Improving the natural channels at the northern and southern entrances of the Dismal Swamp canal	-	15,000 00	15,000 00	6,632 63	7,200 00	1,167 37	15,000 00
Removing sand shoal in Pamlico river	-	3,584 25	3,584 25	3,415 60	-	168 65	3,584 25
Improving Ocracoke inlet	12,050 00	8,962 95	21,012 95	7,950 66	-	13,062 29	21,012 95
Opening a passage between the town of Beaufort and Pamlico sound, and improving New river	20,000 00	10,000 00	30,000 00	-	-	30,000 00	30,000 00
Improving Cape Fear river, below Wilmington	10,000 00	20,019 18	30,019 18	16,578 27	6,062 99	7,377 92	30,019 18
Removing obstructions in Savannah river	-	20,922 29	20,922 29	3,301 58	17,620 71	-	20,922 29
Improving the inland channel between St. Mary's and St. John's	5,000 00	6,680 11	11,680 11	4,129 04	7,551 07	-	11,680 11
Removing the Brunswick bar, to improve the harbor of Brunswick	-	10,000 00	10,000 00	44 00	9,956 00	-	10,000 00
Improving the harbor of Mobile	50,000 00	21,070 33	71,070 33	163 01	49,500 00	21,407 32	71,070 33
Deepening the channel in Pascagoula river	-	3,827 40	3,827 40	826 24	-	3,001 16	3,827 40
Increasing the depth of water at the mouth of the Mississippi river	210,000 00	75,000 00	285,000 00	51,094 50	215,950 00	17,955 50	285,000 00
Removing a mud shoal in the channel of the east pass to Appalachicola	-	10,000 00	10,000 00	100 00	9,900 00	-	10,000 00
Improving the navigation of Red river	[65,000 00	694 26	65,694 26	65,694 26	-	-	65,694 26

STATEMENT No. 1—Continued.

Designation of the works.	Available for 1837, and whence derived.			Amount available accounted for.			
	From appropriations for 1837.	From balances remaining in Treasury, and in the hands of agents, on 30th September, 1836.	Aggregate available.	Amount applied, corresponding with the amount of accounts rendered to 30th September, 1837.	Amount drawn from the Treasury, 30th September, 1837.	Balances in the hands of agents, 30th September, 1837.	Aggregate accounted for, corresponding with the amount available for 1837.
IMPROVEMENT OF HARBORS, RIVERS, &c.							
Constructing a boat and working the same in Red river	-	$30,000 00	$30,000 00	$29,981 64	-	$18 36	$30,000 71
Improving the navigation of Arkansas river	$25,000 00	34,850 71	59,850 71	29,896 21	$2,970 00	26,984 50	59,850 71
Improving the navigation of Cumberland do.	55,000 00	17,491 35	72,491 35	38,491 35	34,000 00	-	72,491 35
Improving the navigation of the Ohio river above the falls	60,000 00	56,087 07	116,087 07	104,645 18	10,000 00	1,441 89	116,087 07
Improving the navigation of the Ohio, Missouri, and Mississippi rivers	23,000 00	-	23,000 00	1,924 00	21,076 00	-	23,000 00
Improving the navigation of the Ohio and Mississippi rivers, from Louisville to New Orleans	60,000 00	33,528 20	93,528 20	60,677 80	25,695 77	7,154 63	93,528 20
Improving the Mississippi river, above the mouth of the Ohio river, and the Missouri river	40,000 00	39,158 50	79,158 50	21,250 85	57,000 00	907 65	79,158 50
Pier in the Mississippi river, near St. Louis	35,000 00	15,000 00	50,000 00	296 37	47,165 88	2,537 75	50,000 00
Dollars -	1,217,188 00	939,655 82	2,156,843 82	1,208,683 20	638,329 15	309,831 47	2,156,843 82

LIGHT-HOUSES AND BEACON-LIGHTS.							
Beacon-light at Grand river	-	466 04	466 04	81 11	-	384 93	466 04
Beacon-light at Huron river	-	20 20	20 20	20 20	-	-	20 20
Beacon-light at Cunningham creek	-	225 00	225 00	-	-	225 00	225 00
Beacon-light at Ashtabula creek	-	1,267 76	1,267 76	1,267 76	-	-	1,267 76
Beacon-lights at Genesee river and Big Sodus bay	-	2,143 49	2,143 49	963 36	-	1,180 13	2,143 49
Beacon-light at Oswego	715 00	9 32	724 32	724 32	-	-	724 32
Beacon-light at Black river	-	1,365 58	1,365 58	1,365 58	-	-	1,365 58
Removing light-house at Goat island	-	54,460 11	54,460 11	10,804 81	41,900 00	2,555 30	54,460 11
Removing the light-house at Old Point Comfort into Fort Monroe	6,000 00	-	6,000 00	-	4,000 00	2,000 00	6,000 00
A light-house on Flynn's Knoll, near Sandy Hook	200,000 00	-	200,000 00	-	200,000 00	-	200,000 00
Beacon-light at Erie, Pennsylvania	674 00	-	674 00	-	674 00	-	674 90
Dollars	207,389 00	59,957 50	267,346 50	15,227 14	245,774 00	6,345 36	267,346 50
MISCELLANEOUS.							
Ohio northern boundary	-	12,542 35	12,542 35	10,791 98	-	1,750 37	12,542 35
Lithographic press of the War Department	-	266 37	266 37	9 12	-	257 25	266 37
Dollars	-	12,808 72	12,808 72	10,801 10	-	2,007 62	12,808 72
MILITARY ACADEMY.							
Defraying the expenses of the Board of Visiters	2,007 84						
Fuel, forage, stationary, printing, transportation, and postage	8,000 00						
Repairs, improvements, and expenses of buildings, grounds, roads, wharves, boats and fences	10,178 25						
Pay of adjutant's and quartermaster's clerks	950 00						
Philosophical apparatus and repairs of the same	300 00						
Models for the department of engineering	300 00						

STATEMENT No. 1—Continued.

Designation of the works.	Available for 1837, and whence derived.			Amount available accounted for.			
	From appropriations for 1837.	From balances remaining in Treasury, and in the hands of agents on 30th of September, 1836.	Aggregate available.	Amount applied, corresponding with the amount of accounts rendered to the 30th Sept., 1836.	Amount undrawn from the Treasury, 30th September, 1837.	Balances in the hands of agents, 30th September, 1837.	Aggregate accounted for, corresponding with the amount available for 1837.
MILITARY ACADEMY.							
Models for the drawing department, apparatus and contingencies of the department of chemistry, and instruments and repairs for the mathematical department - -	$850 00						
Incidental expenses of the department of artillery - - - - - -	300 00						
Increase and expenses of the library -	600 00						
Miscellaneous items and incidental expenses	1,777 50	$42,618 79	$114,085 73	$39,834 74	$33,978 89	$40,270 10	$114,085 73
Completing the chapel - - -	1,253 35						
Erection of a building to contain the public stores - - - - - -	1,500 00						
Preparation of a yard and construction of permanent shops, suitable for carpenters, painters, blacksmiths, &c., and for safe-keeping of implements and materials -	8,000 00						
Erection of a building for recitation and military exercises - - - - -	30,000 00						

Erection of new barracks for the Military Academy department, to consist of eight buildings - - - - -	4,000 00						
Grading grounds about the exercise hall and removing temporary buildings - -	350 00						
Compensation to the acting professor of chemistry, mineralogy, and geology at the Military Academy - - -	300 00						
A painting room for the professor of drawing	800 00						
Dollars -	71,466 94	42,618 79	114,085 73	39,834 74	33,978 89	40,270 10	114,085 73

RECAPITULATION.

Fortifications - - - -	248,123 31	1,384,232 22	1,632,355 53	1,064,679 65	378,832 25	188,843 63	1,632,355 53
Harbors and rivers - - - -	1,217,188 00	939,655 82	2,156,843 82	1,208,683 20	638,329 15	309,831 47	2,156,843 82
Roads - - - - -	397,183 63	651,126 36	1,048,309 99	574,895 86	322,015 51	151,398 62	1,048,309 99
Light-houses - - - -	207,389 00	59,957 50	267,346 50	15,227 14	245,774 00	6,345 36	267,346 50
Miscellaneous - - - -	-	12,808 72	12,808 72	10,801 10	-	2,007 62	12,808 72
Military Academy - - - -	71,466 94	42,618 79	114,085 73	39,834 74	33,978 89	40,272 10	114,085 73
Dollars -	2,141,350 88	3,090,399 41	5,231,750 29	2,914,121 69	1,618,929 80	698,698 80	5,231,750 29

No. 2.

Statement showing the amount of funds to be accounted for during the year ending 30th September, 1837, by the agents of the Engineer department, embracing the balances in their hands on the 1st October, 1836; the sums remitted them during the year, and in each quarter of the year; and the amounts received from and for sales of materials, &c.; also, showing the manner in which the amount in their hands, during the year, is accounted for.

NAMES.	Designation of the objects of disbursements.	For what period.	Amount to be accounted for, and how accruing.				
			Balances in hands of agents, 30th September, 1836.	Amounts remitted in each quarter.	Am'ts received from former agents.	Am'ts received from sales, &c.	Total amount to be accounted for in the year ending 30th September, 1837.
Brig. Gen. C. Gratiot -	Fort at Grande Terre, Louisiana - -	4th qr 1836	$50,000	-	-	-	$50,000
Col. J. G. Totten -	Fort Adams, Rhode Island - -	do do	4,682 92				
		1st qr 1837	-	-	-	$1,037 75	
		2d qr do	-	-	-	207 10	
		3d qr do	-	-	-	232 93	6,160 70
Lt. Col. R. E. DeRussy	Military Academy - - -	4th qr 1836	34,819 87	-	-	643 28	
		1st qr 1837	-	$7,117 50			
		2d qr do	-	37,536 19			
		3d qr do	-	-	-	-	80,116 84
Maj. J. L. Smith -	Fort Schuyler, New York - -	4th qr 1836	3,935 46	20,000			
		1st qr 1837					
		2d qr do	-	50,000			
		3d qr do	-	35,000	-	-	108,935 46
	Repairs at Fort Columbus and Castle Williams	4th qr 1836	1,021 43	16,000			
		1st qr 1837					
		2d qr do	-	4,000			

		3d qr do	-	-	-		21,021 43
	Repairs at Fort Lafayette - - -	4th qr 1836	1,780 15				
		3d qr 1837	-	-	-	-	1,780 15
	Fort Hamilton - - - -	4th qr 1836	1,156 12				
		3d qr 1837	-	-	-	-	1,156 12
	Contingencies of fortifications - -	1st qr 1837	-	550 86	-	-	550 86
	Purchase of land at Throg's point -	do	-	2,000			
		2d qr do	-	-	-	-	2,000
	Improvement of Little Egg Harbor -	3d qr do	-	5,000	-	-	5,000
	Improving harbor of N. Brunswick, N. J.	do	-	7,000	-	-	7,000
	Icebreaker at Staten island, New York -	4th qr 1836					
		1st & 2d '37					
		3d qr do	-	10,000	-	-	10,000
Capt. W. H. Chase -	Fort Pickens, Pensacola, Florida - -	4th qr 1836	3,218 13				
		1st qr 1837					
		2d qr do					
		3d qr do	-	-	-	221	3,439 13
	Fort Morgan, Alabama - - -	4th qr 1836	54 27				
		1st qr 1837	-	734 90			
		2d & 3d do	-	-	-	-	789 17
	Fort on Foster's bank, Pensacola - -	4th qr 1836	6 86				
		1st qr 1837					
		2d qr do	-	27,000			
		3d qr do	-	-	-	-	27,006 86
	Fort Livingston, Grande Terre, Louisiana	4th qr 1836	3,769 59				
		1st qr 1837					
		2d qr do					
		3d qr do	-	-	-	-	3,769 59
	Fort Jackson, Louisiana - - -	4th qr 1836	733 71				
		3d qr 1837	-	-	-	-	733 71
	Mobile harbor, Alabama - - -	4th qr 1836	20,904 60				
		1st qr 1837	-	165 73			
		2d & 3d do	-	-	-		21,070 33
	Pascagoula river, Mississippi - -	4th qr 1836	42 55				
		1st qr 1837	-	225			
		2d & 3d do	-	-	-	-	267 55
	Contingencies of fortifications - -	4th qr 1836	-	7,000			
		1st qr 1837					

No. 2—Continued.

NAMES.	Designation of the objects of disbursements.	For what period.	Amount to be accounted for, and how accruing.				
			Balances in hands of agents, 30th September, 1836.	Amounts remitted in each quarter.	Am'ts received from former agents.	Am'ts received from sales, &c.	Total amount to be accounted for in the year ending 30th Sept. 1837.
Capt. W. H. Chase -	Contingencies of fortifications - -	2d qr 1837					
		3d qr do	-	-	-	-	$7,000 00
	Incidental expenses attending repairs of fortifications, &c.	4th qr 1836	$5,092 75				
		3d qr 1837	-	-	-	-	5,092 75
	Improvement at the mouths of the Mississippi river	1st qr do	-	$6,050			
		2d qr do	-	15,000			
		3d qr do	-	-	-	-	21,050
	Removing mud shoal in Appalachicola river	3d qr do	-	100	-	-	100
Capt. R. Delafield -	Incidental expenses attending repairs of fortifications, &c.	4th qr 1836	33 57	-	-	-	33 57
	Removal of bar in Del. river near Ft. Mifflin	4th qr do	-	13 80	-	-	13 80
Capt. W. A. Eliason -	Fort Calhoun - - - - -	4th qr do	3,227 73	36,900			
		1st qr 1837	-	21,000	-	$1,127 57	
		2d qr do	-	20,700			
		3d qr do	-	45,200	-	753 29	128,908 59
	Removing the light-house at Old Point Comfort	2d qr do	-	2,000	-	-	2,000
Capt. C. A. Ogden -	Cumberland road in Indiana - -	4th qr 1836	46,625 17	36,640			
		1st qr 1837	-	32,000			
		2d qr do					
		3d qr do	-	80,000	-	-	195,265 17
	Cumberland road in Illinois - -	4th qr 1836	40,047 87				
		1st qr 1837	-	28,200			

		2d qr do					
		3d qr do	-	40,000	-	-	108,247 87
Lieut. A. H. Bowman	Road from opposite Memphis, on the Mississippi, to the river St. Francis	4th qr 1836	27,733 25				
		1st qr 1837	-	50,000			
		2d qr do					
		3d qr do	-	30,000	-	-	107,733 25
Lt. J. K. F. Mansfield	Fort Pulaski, Georgia - - -	4th qr 1836	2,911 73	53,500			
		1st qr 1837	-	58,000			
		2d qr do	-	17,100	-	4 37	
		3d qr do	-	33,500	-	1	165,017 10
	Fortifications in Charleston harbor, S. C.	1st qr do	-	7,100			
		2d & 3d do	-	6,000	-	-	13,100
	Improving Savannah river, Georgia -	4th qr 1836	3,301 58				
		1st qr 1837	-	-	-	100	
		2d qr do					
		3d qr do	-	-	-	-	3,401 58
	Improving the inland navigation between St. Mary's and St. John's, Florida	4th qr 1836	-	600			
		1st qr 1837	-	3,300			
		2d qr do	-	-	-	261 63	
		3d qr do	-	-	-	-	4,161 63
	Removal of bar to improve the harbor of Brunswick, Georgia	1st qr do	-	44	-	-	44
	Incidental expenses attending repairs of fortifications, &c.	4th qr 1836	1,000 00				
		3d qr 1837	-	-	-	-	1,000
Lieut. Alex. J. Swift -	Fort Caswell, North Carolina -	4th qr 1836	1,443 75	5,400			
		1st qr 1837	-	5,900	-	244 97	
		2d qr do	-	9,900			
		3d qr do	-	21,000	-	-	43,888 72
	Incidental expenses attending repairs of fortifications, &c.	4th qr 1836	18 74				
		3d qr 1837	-	-	-	-	18 74
	Improving Pamlico river, North Carolina	4th qr 1836	584 25	3,000	-	-	3,584 25
		2 & 3 1837					
	Improving Ocracoke inlet, do -	4th qr 1836	12 83				
		1st qr 1837	-	1,000	-	852 94	
		2d qr do	-	9,900	-	39 50	
		3d qr do	-	9,207 68	-	-	21,012 95
	Improving Cape Fear river do -	4th qr 1836	5,156 19	5,800			
		1st qr 1837	-	5,900			

No. 2—Continued.

NAMES.	Designation of the objects of disbursements.	For what period.	Amount to be accounted for, and how accruing.				
			Balances in hands of agents, 30th September, 1837.	Amounts remitted in each quarter.	Am'ts received from former agents.	Amounts received from sales, &c.	Total amount to be accounted for the year endi 30th Sept. 183
Lt. Alex. J. Swift -	Improving Cape Fear river, N. Carolina -	2d qr 1837	-	$4,000			
		3d qr do	-	3,000	-	$100	$23,956 19
	Opening a passage between the town of Beaufort and Pamlico sound, and improving New river, North Carolina	3d qr do	-	30,000	-	-	30,000
Lt. G. W. Cullum -	Removing the light-house on Goat island	4th qr 1836	$76				
		1st qr 1837	-	-	-	-	760 12
Lt. Wm. Smith -	Improvement at Genesee river, N. Y. -	3d qr do	-	15,100	-	-	15,100
	Improving the harbor at mouth of Oak Orchard creek	do	-	5,400	-	-	5,400
Lt. R. E. Lee -	Pier in the Mississippi river, near St. Louis	do	-	2,400	-	-	2,400
	Improvement of the Mississippi river, above the mouth of the Ohio river, and the Missouri river	do	-	200	$2,860 87	-	3,060 87
Andrew Talcott -	Improvement at the mouth of the Mississippi river	2d qr 1837	-	10,000			
		3d qr do	-	36,000	-	-	46,000
Maj. Henry Whiting -	Road from Detroit to Fort Gratiot -	4th qr 1836	31 88				
		2&3 " 1837	-	-	-	-	31 88
	Road from Detroit to Grand river -	4th qr 1836	5,353 97				
		1st qr 1837					
		2d qr do					
		3d qr do	-	-	-	-	5,353 97

Henry Smith -	Piers at La Plaisance bay - - -	4th qr 1836	82 12				
		3d qr 1837	-	-	-	-	82 12
	La Plaisance bay road - - -	4th qr 1836	2,194 36	-	-	-	2,194 36
	Port Lawrence and Adrian road - -	do	18 92				
		3d qr 1837	-	-	-	-	18 92
	Cleaveland harbor - - - -	4th qr 1836	110 96	4,973 26			
		1st qr 1837					
		2d qr do					
		3d qr do	-	-	-	-	5,084 22
	Huron river - - - -	4th qr 1836	2,579 74				
		1st qr 1837					
		2d qr do					
		3d qr do	-	-	-	-	2,579 74
	Grand river - - - -	4th qr 1836	2,450 60	2,000			
		1st qr 1837					
		2d qr do					
		3d qr do	-	-	-	-	4,450 60
	Black river - - - -	4th qr 1836	-	902 09			
		1st qr 1837					
		2d qr do	-	6,410			
		3d qr do	-	-	-	-	7,312 09
	Ashtabula creek - - - -	4th qr 1836	1,787 55				
		1st qr 1837					
		2d qr do					
		3d qr do	-	-	-	-	1,787 55
	Cunningham creek, Ohio - - -	1st qr 1837	50				
		2d qr do	-	5,000			
		3d qr do	-	-	-	-	5,050
	Presque Isle harbor, Pennsylvania -	4th qr 1836	89 97	5,000			
		3d qr 1837	-	-	-	-	5,089 97
	Dredging machine for Lake Erie - -	1st qr do	-	8,000	353 16		
		2d qr do	-	-	6,099 71		
		3d qr do	-	-	-	-	14,452 87
	Black Rock harbor, New York - -	4th qr 1836	1,046 97				
		1st qr 1837					
		2d qr do					
		3d qr do	-	-	-	-	1,046 97
	Dunkirk harbor, do - -	4th qr 1836	[illegible]	3,458 18			

No. 2—Continued.

NAMES.	Designation of the objects of disbursements.	For what period.	Amount to be accounted for, and how accruing.				
			Balances in hands of agents, 30th September, 1836.	Amounts remitted in each quarter.	Am'ts received from former agents.	Amounts received from sales, &c.	Total amount to be accounted for in the year ending 30th Sept. 1837.
Henry Smith -	Dunkirk harbor, New York - -	1st qr 1837					
		2d qr do					
		3d qr do	-	-	-	-	$4,382 62
	Buffalo harbor, do - -	4th qr 1836	-	$537 84			
		1st qr 1837					
		2d qr do					
		3d qr do	-	-	-	-	537 84
	Beacon-light at Grand river - -	4th qr 1836	$466 04				
		1st qr 1837					
		2d qr do	-	-	-	-	466 04
	Beacon-light at Ashtabula creek - -	4th qr 1836	1,267 76	-	-	-	1,267 76
	Beacon-light at Black river - -	do	-	266			
		1st qr 1837					
		2d qr do					
		3d qr do	-	-	-	-	266
	Beacon-light at Huron river - -	4th qr 1836	20 20				
		3d qr 1837	-	-	-	-	20 20
	Harbor near the mouth of river Raisin, M.	4th qr 1836	3,700				
		1st qr 1837	-	-	$389 94		
		2d qr do	-	10,000			
		3d qr do	-	-	2,841 02	-	16,930 96
Lt. R. C. Smead -	Oswego harbor, New York - -	4th qr 1836	2,132 16	3,200			
		3d qr 1837	-	22,293 64	2,490 78	-	30,116 58

	Light-house at Oswego	4th qr 1836	306 70				
		3d qr 1837	-	724 32	-	-	1,031 02
U. G. White	Oswego harbor	2d qr do	-	6,800	-	-	6,800
Gen. Jos. G. Swift	Improvement at Big Sodus bay	4th qr 1836	3,564 42				
		1st qr 1837					
		2d qr do	-	5,600			
		3d qr do	-	10,000	-	-	19,164 42
	Improvement at Genesee river	4th qr 1836	5,135 77				
		1st qr 1837					
		2d qr do					
		3d qr do	-	-	-	-	5,135 77
	Improvement of harbor at the mouth of Oak Orchard creek.	4th qr 1836	773 86				
		3d qr 1837	-	-	-	-	773 86
	Beacon-lights at Sodus bay and Genesee river.	4th qr 1836	2,134 70				
		3d qr 1837	-	-	-	-	2,134 70
Capt. Jas. Allen	Chicago harbor, Illinois	4th qr 1836	12,188 79	6,200	-	$130	
		1st & 2d '37	-	21,846 04			
		3d qr 1837	-	17,000	-	-	57,364 83
Lt. J. G. Barnard	Pascagoula river	4th qr 1836	3,001 16	-	-	-	3,001 16
Lt. Jno. H. Winder	Fort Caswell	4th qr do	47 36	-	-	-	47 36
	Cape Fear river	4th qr do	581 12	-	-	-	581 12
Maj. H. Saunders	Cape Fear river	4th qr do	15 20	-	-	-	15 20
Lt. Jno. L'Engle	Fortifications Charleston harbor	4th qr do	288 72				
		1st qr 1837	-	1,000 00	-	-	1,288 72
Lt. T. B. W. Stockton	Road from Detroit towards Chicago	4th qr 1836	4,420 59	-	-	-	4,420 59
	Road from Detroit to Saginaw bay	4th qr do	3,661 95	-	-	-	3,661 95
	Road from Sheldon's to St. Joseph's river	4th qr do	1,207 19	-	-	-	1,207 19
	Road from Niles's to St. Joseph's river	4th qr do	2,979 97	-	-	-	2,979 97
	Road from Clinton to Grand river	4th qr do	721 47	-	-	-	721 47
Lt. E. S. Sibley	Road from Detroit towards Chicago	4th qr do	-	-	4,461 28	-	4,461 28
	Road from Detroit to Saginaw bay	4th qr do	-	-	3,661 95	-	3,661 95
	Road from Sheldon's to St. Joseph's river	4th qr do	-	-	1,107 58	-	1,107 58
	Road from Niles's to St. Joseph's river	4th qr do	-	-	2,979 97	-	2,979 97
	Road from Clinton to Grand river	4th qr do	-	-	721 47	-	721 47
Maj. B. K. Pierce	Road from Detroit towards Chicago	3d qr 1837	-	-	3,659 53	-	3,659 53
	Road from Detroit to Saginaw bay	3d qr do	-	-	3,383 29	-	3,383 29

No. 2—Continued.

NAMES.	Designation of the objects of disbursement.	For what period.	Amount to be accounted for, and how accruing.				
			Balances in hands of agents, 30th September, 1836.	Amounts remitted in each quarter.	Am'ts received from former agents.	Am'ts received from sales, &c.	Total amount to be accounted for in the year ending 30th September, 1837.
Maj. B. K. Pierce -	Road from Sheldon's to St. Joseph's river -	3d qr 1837	-	-	$1,107 58	-	$1,107 58
	Road from Niles's to St. Joseph's river -	3d qr do	-	-	2,979 97	-	2,979 97
	Road from Clinton to Grand river -	3d qr do	-	-	721 47	-	721 47
Capt. H. A. Thompson	Fort McHenry, Redoubt wood and Covington battery	4th qr 1836	$1,668 31	$24,860			
		1st qr 1837	-	7,050			
		2d qr do	-	8,700			
		3d qr do	-	6,390	-	-	48,668 31
	Incidental expenses attending repairs of fortifications, &c.	4th qr 1836	21,234 06				
		1st & 2d '37					
		3d qr do	-	5,135	-	$98	26,467 06
Bank of Troy - -	Hudson river, improvement of - -	4th qr 1836	24,076 01	33,072 36			
		1st qr 1837	-	30,000			
		2d qr do	-	37,500			
		3d qr do	-	28,808	-	-	153,456 37
Moyamensing Bank -	Fort Delaware - - - -	4th qr 1836	5,147 41	30,000			
		1st qr 1837	-	15,000			
		2d qr do	-	40,000			
		3d qr do	-	16,700	-	45	106,892 41
	Delaware breakwater - - -	4th qr 1836	31,092 18	35,000			
		1st qr 1837	-	22,076 60			
		2d qr do	-	15,000	3,757 06		
		3d qr do	-	71,000	54 71	-	177,980 55

	Newcastle harbor - - - -	4th qr 1836	9,562 75	7,840			
		1st qr 1837	"	7,000			
		2d qr do					
		3d qr do	-	-	-	-	24,402 75
	Harbor of Chester - - - -	4th qr 1836	1,659 75	-	-	102 70	
		2d qr 1837	-	2,000			
		3d qr do	-	-	-	-	3,762 45
	Incidental expenses attending repairs of fortifications, &c.	4th qr 1836	3,997 59	15,000	33 57	10	
		1st qr 1837	-	2,983 39			
		2d qr do	-	9,000			
		3d qr do	-	5,000	-	-	36,024 55
	Mooring buoys at the Delaware breakwater	2d qr do	-	2,000	-	-	2,000
Clinton Bank, Ohio, Columbus	Cumberland road in Ohio - - -	4th qr 1836	592 89				
		2d qr 1837	-	-	-	-	592 89
Merchants' Bank, Boston	Fort Warren - - - -	4th qr 1836	6,747 05	-	-	-	6,747 05
		2d qr 1837					
	Repairs at Fort Independence, &c. -	4th qr 1836	667 57	-	-	-	667 57
	Sea wall at Deer island - - -	do	1,130	-	-	-	1,130
	Incidental expenses attending repairs of fortifications, &c.	do	5	-	-	-	5
Merchants and Mechanics' Bank, Wheeling	Cumberland road east of the Ohio river -	do	1,138 48	-	-	-	1,138 48
Merchants and Manufacturers' Bank, Pittsburg	Cumberland road, east of the Ohio river -	4th qr 1836	17,733 84	12,273 45	-	115 59	
		1&2 " 1837	-	7,183 63	-	437 65	
		3d qr do	-	-	-	386 70	38,130 86
	Cumberland road in Ohio - - -	4th qr 1836	14,178 24	60,000			
		1st qr 1837	-	30,000			
		2d qr do	-	65,000	592 89	397 26	
		3d qr do	-	75,000	-	367 42	245,535 81
	Improving the Ohio river between Pittsburg and the falls	4th qr 1836	35,100 94				
		1st qr 1837	-	20,000	-	1,000	
		2d qr do	-	25,000			
		3d qr do	-	25,000	-	-	106,100 94
Newport Exchange Bank	Fort Adams - - - - -	4th qr 1836	"	60,000			
		1st qr 1837	-	13,000			
		2d qr do	-	35,000			
		3d qr do	-	45,000	1,970 58	-	154,970 58

No. 2—Continued.

NAMES.	Designation of the objects of disbursements.	For what period.	Amount to be accounted for, and how accruing.				
			Balances in hands of agents, 30th September, 1836.	Amounts remitted in each quarter.	Am'ts received from former agents.	Am'ts received from sales, &c.	Total amount to be accounted for in the year ending 30th September, 1837.
Newport Exchange Bank	Light-house on Goat island - -	2d qr 1837	-	$12,600	$582 37		
		3d qr do	-	-	-	-	$13,182 37
Henry M. Shreve -	Mississippi river, above the mouth of the Ohio river, and the Missouri river -	4th qr 1836	$6,958 50				
		1st qr 1837	-	15,000			
		2d qr do					
		3d qr do	-	-	-	-	21,958 50
	Ohio and Mississippi rivers, from Louisville to New Orleans	4th qr 1836	23,685 43	13,100			
		1st qr 1837					
		2d qr do	-	14,500			
		3d qr do	-	16,000	-	$547	67,832 43
	Improving the Red river - - -	4th qr 1836	136 76				
		1&2 " 1837	-	60,000	-	557 50	
		3d qr do	-	4,401 26	-	-	65,095 52
	Constructing and working boat on Red river	1st qr do	-	30,000			
		3d qr do	-	-	-	-	30,000 00
	Improving the Arkansas river - -	1st qr do	-	16,000			
		2d qr do	-	20,000			
		3d qr do	-	21,030	-	-	57,030
Ezra Crowell - -	Hyannis harbor - - - - -	4th qr 1836	719 12				
		1&3 " 1837	-	2,400			
		3d qr do	-	2,600	-	-	5,719 12
Thos. M. Clark -	Merrimack river - - - - -	4th qr 1836	200 81	3,860			
		3d qr 1837	-	-	-	-	4,060 81

Asa S. Bowley -	Provincetown harbor - - -	4th qr 1836	510 66					
		1&2 " 1837	-	4,061 65	-	-	4,572	31
S. Sampson - -	Plymouth beach - - - -	4th qr 1836	-	-	431 08			
		1st qr 1837						
		2d & 3d '37	-	-	-	-	431	08
A. W. Walworth -	Cleaveland harbor - - - -	4th qr 1836	-	-	9,200			
		1st & 2d '37	-	5,000				
		3d qr 1837	-	5,000	-	-	19,200	
Henry Phelps - -	Grand river - - - -	4th qr 1836	-	-	2,554 86	70		
		2d qr 1837	-	-	-	-	2,624	86
	Beacon-light at Grand river - -	3d qr do	-	-	466 04	-	466	04
Jno. A. Potter - -	Grand river improvement - - -	2d qr do	-	981 11	5,409 30			
		3d qr do	-	-	-	-	6,390	41
	Beacon-light at Grand river - -	3d qr do	-	-	418 01	-	418	01
P. S. V. Hamot -	Presque Isle harbor - - -	4th qr 1836	-	-	4,595 60			
		1st qr 1837						
		2d qr do	-	7,000				
		3d qr do	-	8,068 52	1,302 35	-	20,966	47
Henry Desbrow -	Improvement of harbor near River Raisin -	4th qr 1836	1,101 09	-	1,706 77			
		1st qr 1837	-	-	-	-	2,807	86
N. D. Curtis - -	Improvement of harbor near River Raisin -	2d qr do	-	-	9,535 61			
		3d qr do	-	18,500	1,658 98	-	29,694	59
Ashbel Dart - -	Conneaut creek - - - -	4th qr 1836	1,730 37					
		2d qr 1837	-	3,000				
		3d qr do	-	2,000	-	-	6,730	37
M. Hubbard - -	Ashtabula creek - - - -	4th qr 1836	-	-	2,487			
		2d qr 1837	-	4,000				
		3d qr do	-	4,000	-	-	10,487	
	Beacon-light at Ashtabula creek -	4th qr 1836	-	-	1,267 76			
		1st qr 1837						
		2d qr do						
		3d qr do	-	-	-	-	1,267	76
Jno. Tull - -	Black river, Ohio - - - -	4th qr 1836	-	-	3,227 57	214 75	3,442	32
	Beacon-light at Black river - -	4th qr do	1,099 58	-	121 32	-	1,220	90
Thos. Forster - -	Dunkirk harbor - - - -	4th qr do	429 66	-	2,000			
		1st qr 1837	-	-	1,566 05			
		2d qr do	-	10,000				
		3d qr do	-	8,058 71	815 13	-	22,869	55

No. 2—Continued.

NAMES.	Designation of the objects of disbursements.	For what period.	Amount to be accounted for, and how accruing.				
			Balances in hands of agents, 30th September, 1836.	Amounts remitted in each quarter.	Am'ts received from former agents.	Am'ts received from sales, &c.	Total amount to be accounted for in the year ending 30th September, 1837.
P. B. Porter - -	Black rock harbor - - - -	4th qr 1836	-	-	$850	-	$850
W. McKnight - -	Cumberland river below Nashville -	4th qr do	$6,643 18	$6,500	-	$100	
		1st qr 1837	-	-	-	30	
		2d qr do	-	5,500	-	10	
		3d qr do	-	-	-	-	18,783 18
	Cumberland river above Nashville -	3d qr do	-	21,000	-	-	21,000
F. L. Dancy - -	Repairs at Fort Marion, &c. - -	4th qr 1836	-	7,700			
		1st qr 1837	-	10,150			
		2d qr do	-	16,500			
		3d qr do	-	3,000		1,100	38,450
James S. Johnson -	Fortifications in Charleston harbor, &c. -	3d qr do	-	4,820	-	-	4,820
William Robinson -	Harbor of Baltimore - - - -	4th qr 1836	102	9,721			
		1 & 2 1837	-	9,594			
		3d qr do	-	5,866	-	-	25,283
William Chandler -	Harbor of Wilmington - - -	4th qr 1836	-	15,000			
		1st qr 1837					
		2d qr do					
		3d qr do	-	2,000	-	-	17,700
Joshua Herrick -	Piers at Kennebunk - - -	4th qr 1836	-	1,981			
		1st qr 1837	-	855			
		2d qr do	-	3,236			
		3d qr do	-	1,426 32	-	-	7,498 32

Jeremiah Sturges -	Harbor of Southport - - -	4th qr 1836	546 14					
		2d qr 1837	-	1,100				
		3d qr do	-	400	-	-	2,046	14
Joseph Haskell -	Improvement at Sandy bay - -	4th qr 1836	1,149 95	5,000				
		1st qr 1837						
		2d qr do	-	15,000				
		3d qr do	-	5,000	-	-	26,449	95
Freeman Bradford -	Breakwater at Stanford ledge, Portland harbor	1st qr do	-	10,000				
		2d qr do	-	6,500				
		3d qr do	-	18,500	-	-	35,000	
Marshall Parks -	Improvement at the Dismal Swamp canal	1st qr do	-	5,000				
		2d qr do	-	2,800				
		3d qr do	-	-	-	-	7,800	
W. P. Eaton - -	Improvement in the river Thames, Con. -	4th qr 1836	514 02	5,000				
		1st qr 1837	-	1,000				
		2d qr do	-	4,000				
		3d qr do	-	11,000	-	-	21,514	02
Ezra Coe - -	Harbor of Church's cove - - - -	1st qr do	-	1,000				
		2d qr do	-	1,000				
		3d qr do	-	4,512	-	-	6,512	
L. G. Sampson -	Improvement near Duxbury harbor -	4th qr 1836	-	3,000	-	96 86		
		1st qr 1837						
		2d qr do	-	1,500				
		3d qr do	-	-	-	-	4,596	86
D. K. Akin - -	Improvement at Bass river - -	2d qr do	-	4,400				
		3d qr do	-	2,570	-	-	6,970	
P. G. Munro - -	Fort Warren - - - -	4th qr 1836	-	35,200	6,747 05			
		1st qr 1837						
		2d qr do	-	54,500	346	291 50		
		3d qr do	-	66,000	-	-	163,084	55
	Repairs at Fort Independence - -	4th qr 1836	-	5,400	667 57			
		1st qr 1837						
		2d qr do	-	41,000	-	90		
		3d qr do	-	45,000	-	610 20	92,767	77
	Preservation of Deer island - -	4th qr 1836	-	-	1,130			
		1&2 " 1837						
		3d qr do	-	-	-	-	1,130	

No. 2—Continued.

NAMES.	Designation of the objects of disbursements.	For what period.	Amount to be accounted for, and how accruing.				
			Balances in hands of agents, 30th September, 1836.	Amounts remitted in each quarter.	Am'ts received from former agents.	Amounts received from sales, &c.	Total amount to be accounted for in the year ending 30th Sept. 1837.
P. G. Munro - -	Incidental expenses attending repairs of fortifications, &c.	4th qr 1836					
		2d qr 1837	-	-	$5	-	$5
John T. Gibbs -	Piscataqua river, deepening the Cocheco branch of - - - - -	4th qr 1836	$580 76				
		2d qr 1837	-	$300			
		3d qr do	-	4,500	-	-	5,380 76
John J. Wendell -	La Plaisance bay road - - -	4th qr 1836	1,915 42				
		2d qr 1837					
		3d qr do	-	-	-	-	1,915 42
John B. Wilbor -	Huron river - - - - -	4th qr 1836	1,336 74				
		1st qr 1837					
		2d qr do	-	2,565	2,096 13		
		3d qr do	-	-	400	-	6,397 87
	Beacon-light at Huron river - -	3d qr do	-	-	20 20	-	20 20
Conrad Reid - -	Black river - - - - -	2d qr do	-	-	4,783 42		
		3d qr do	-	-	1,144 68	-	5,928 10
	Beacon-light at Black river - -	3d qr do	-	-	144 68	-	144 68
James C. Loomis -	Harbor of Westport - - -	1st qr do	-	1,500			
		2d qr do	-	1,500			
		3d qr do	-	1,000	-	-	4,000
	Cedar Point - - - -	3d qr do	-	500	-	-	500
Robert Harper -	Cunningham creek - - -	2d qr do	158 34	-	3,881 60		
		3d qr do	-	-	500	-	4,539 94
Isaac S. Smith -	Harbor of Buffalo - - - -	4th qr 1836					
		3d qr 1837	-	683 84	303 74	-	978 58

Samuel Simons -	Harbor of Bridgeport - - - -	2d qr do	-	2,500			
		3d qr do	-	7,500	-	-	10,000
Thomas Bartram -	Fairweather island - - - -	1st qr do	-	1,000			
		2d qr do	-	2,100			
		3d qr do	-	6,900	-	-	10,000
D. Lane - -	Placing buoys in the vicinity of the monument on Steele's ledge - - -	2d qr do	164 78	466	-	-	630 78
Alexander Parris -	Preservation of Rainsford island, Boston harbor - - - - - -	4th qr 1836	3,900	5,510			
		2d qr 1837	-	3,800			
		3d qr do	-	1,790	-	-	15,000
John Price - -	Removing wreck in the harbor of New Bedford - - - - -	2d qr do	-	2,500	-	144 69	2,644 69
			509,027 18	2,964,176 87	118,594 25	12,780 15	3,604,578 45

No. 2—Continued.

NAMES.	Designation of the objects of disbursements.	For what period.	Amount accounted for.				
			Amount expended in each quarter.	Amount refunded, or returned to the Treasury.	Am't turned over to successors.	Total amount accounted for.	Balance on hand, 30th September, 1837.
Brig. Gen. C. Gratiot -	Fort at Grande Terre, Louisiana - -	4th qr 1836	-	$15,000	-	$15,000	35,000
Col. J. G. Totten -	Fort Adams, Rhode Island - -	4th qr do					
		1st qr 1837					
		2d qr do					
		3d qr do	-	89 69	$1,970 58	2,060 27	4,100 43
Lt. Col. R. E. DeRussy	Military Academy - - -	4th qr 1836	$14,931				
		1st qr 1837	10,335 41				
		2d qr do	14,578 33				
		3d qr do	-	-	-	39,844 74	40,272 10
Maj. J. L. Smith -	Fort Schuyler, New York - -	4th qr 1836	15,751 68				
		1st qr 1837	10,514 21				
		2d qr do	40,311 18				
		3d qr do	36,937 78	-	-	103,514 85	5,420 61
	Repairs at Fort Columbus and Castle Williams	4th qr 1836	11,081 48				
		1st qr 1837	3,036 44				
		2d qr do	4,165 84				
		3d qr do	1,177 27	-	-	19,461 03	1,560 40
	Repairs at Fort Lafayette - - -	4th qr 1836					
		3d qr 1837	-	-	-	-	1,780 15
	Fort Hamilton - - - -	4th qr 1836					
		3d qr 1837	-	-	-	-	1,156 12
	Contingencies of fortifications - -	1st qr do	550 86	-	-	550 86	
	Purchase of land at Throg's point -	do					

		2d qr do	2,000	-	-	2,000		
	Improvement of Little Egg Harbor -	3d qr do	3,148 04	-	-	3,148 04	1,851 96	
	Improving harbor of N. Brunswick, N. J.	do	5,048 30	-	-	5,048 30	1,951 70	
	Icebreaker at Staten Island, New York -	4th qr 1836	499 64					
		1st & 2d '37	1,715 45					
		3d qr do	705 20	-	-	2,920 29	7,079 71	
Capt. W. H. Chase -	Fort Pickens, Pensacola, Florida - -	4th qr 1836						
		1st qr 1837	73 75					
		2d qr do	1,438					
		3d qr do	-	-	-	1,511 75	1,927 38	
	Fort Morgan, Alabama - - -	4th qr 1836						
		1st qr 1837						
		2d & 3d do	-	-	-	-	789 17	
	Fort on Foster's bank, Pensacola -	4th qr 1836						
		1st qr 1837						
		2d qr do						
		3d qr do	28,540 51	-	-	28,540 51		
	Fort Livingston, Grande Terre, Louisiana	4th qr 1836						
		1st qr 1837	315 80					
		2d qr do	780					
		3d qr do	-	-	-	1,095 80	2,673 79	
	Fort Jackson, Louisiana - - -	4th qr 1836						
		3d qr 1837	-	-	-	-	733 71	
	Mobile harbor, Alabama - - -	4th qr 1836						
		1st qr 1837	153 01					
		2d & 3d do	-	-	-	153 01	20,917 32	
	Pascagoula river, Mississippi - -	4th qr 1836	-	-	42 55			
		1st qr 1837						
		2d & 3d do	-	-	-	42 55	225	
	Contingencies of fortifications - -	4th qr 1836						
		1st qr 1837	387					
		2d qr do	136 50					
		3d qr do	-	-	-	523 50	6,476 50	
	Incidental expenses attending repairs of fortifications, &c.	4th qr 1836						
		3d qr 1837	-	-	-	-	5,092 75	
	Improvement at the mouths of the Mississippi river	1st qr do	3,885 33					
		2d qr do	50					
		3d qr do	-	-	-	3,935 33	17,114 67	

No. 2—Continued.

NAMES.	Designation of the objects of disbursements.	For what period.	Amount accounted for.				
			Amount expended in each quarter.	Amount refunded, or returned to the Treasury.	Am't turned over to successors.	Total amount accounted for.	Balance on hand, 30th September, 1837.
Capt. W. H. Chase -	Removing mud shoal in Appalachicola river	3d qr 1837	$100	-	-	$100	
Capt. R. Delafield -	Incidental expenses attending repairs of fortifications, &c.	4th qr 1836	-	-	$33 57	33 57	
	Removal of bar in Delaware river, near Fort Mifflin	4th qr do	13 80	-	-	13 80	
Capt. W. A. Eliason -	Fort Calhoun - - - - -	4th qr do	31,884 92				
		1st qr 1837	19,152 78				
		2d qr do	29,717 74				
		3d qr do	44,999 57	-	-	125,755 01	$3,153 58
	Romoving the light-house at Old Point Comfort	2d qr do	-	-	-	-	2,000
Capt. C. A. Ogden -	Cumberland road in Indiana - -	4th qr 1836	38,316 09				
		1st qr 1837	24,390 03				
		2d qr do	44,684 62				
		3d qr do	66,151 38	-	-	173,542 12	21,723 05
	Cumberland road in Illinois - -	4th qr 1836	22,173 72				
		1st qr 1837	6,869 57				
		2d qr do	12,560 13				
		3d qr do	15,967 52	-	-	57,570 94	50,676 93
Lieut. A. H. Bowman -	Road from opposite Memphis, on the Mississippi, to the river St. Francis	4th qr 1836	17,436 83				
		1st qr 1837	15,729 18				
		2d qr do	12,806 57				
		3d qr do	9,486 66	-	-	55,459 24	52,274 01

Lt. J. K. F. Mansfield	Fort Pulaski, Georgia - - -	4th qr 1836	44,780 29				
		1st qr 1837	42,883 31				
		2d qr do	16,288 54				
		3d qr do	29,959 20	-	-	133,911 34	31,105 76
	Fortifications in Charleston harbor, S. C.	1st qr do	173 70				
		2d & 3d do	14,230 34	-	-	14,404 04	
	Improving Savannah river, Georgia -	4th qr 1836	1,532 10				
		1st qr 1837	1,765 32				
		2d qr do	1,104 80				
		3d qr do	277	-	-	4,679 22	
	Improving the inland navigation between St. Mary's and St. John's, Florida	4th qr 1836	2,540 18				
		1st qr 1837	1,962 31				
		2d qr do	990 09				
		3d qr do	636 51	-	-	6,129 09	
	Removal of bar to improve the harbor of Brunswick, Georgia	1st qr do	44	-	-	44	
	Incidental expenses attending repairs of fortifications, &c.	4th qr 1836					
		3d qr 1837	-	-	-	-	1,000
Lt. Alex. J. Swift -	Fort Caswell, North Carolina - -	4th qr 1836	4,999 33				
		1st qr 1837	4,401 09				
		2d qr do	10,000 25				
		3d qr do	18,683 21	-	-	38,083 88	5,804 84
	Incidental expenses attending repairs of fortifications, &c.	4th qr 1836					
		3d qr 1837	-	-	-	-	18 74
	Improving Pamlico river, North Carolina	4th qr 1836	3,367 88				
		2 & 3 1837	47 72	-	-	3,415 60	168 65
	Improving Ocracoke inlet, do -	4th qr 1836					
		1st qr 1837	1,166 46				
		2d qr do	2,866 11				
		3d qr do	3,918 09	-	-	7,950 66	13,062 29
	Improving Cape Fear river, do -	4th qr 1836	2,061 31				
		1st qr 1837	5,460 29				
		2d qr do	2,577 12				
		3d qr do	6,479 55	-	-	16,578 27	7,377 92
	Opening a passage between the town of Beaufort and Pamlico sound, and improving New river, N. C.	3d qr do	-	-	-	-	30,000 00

No. 2—Continued.

NAMES.	Designation of the objects of disbursements.	For what period.	Amount accounted for.				
			Amount expended in each quarter.	Amount refunded or returned to Treasury.	Amount turned over to successors.	Total amount accounted for.	Balance on hand, 30th Sep. 1837.
Lt. G. W. Cullum -	Removing light-house on Goat island -	4th qr 1836	$93 84				
		1st qr 1837	83 91	-	$582 37	$760 12	
Lt. Wm. Smith -	Improvement at Genesee river, N. Y. -	3d qr do	14,812 27	-	-	14,812 27	$287 73
	Improving the harbor at mouth of Oak Orchard creek	do	2,538 67	-	-	2,538 67	2,861 33
Lt. R. E. Lee -	Pier in the Mississippi river, near St. Louis	do	62 25	-	-	62 25	2,337 75
	Improvement of the Mississippi river, above the mouth of the Ohio river, and the Missouri river	do	2,153 22	-	-	2,153 22	907 65
Andrew Talcott -	Improvement at the mouth of the Mississippi river	2d qr 1837	7,081 36				
		3d qr do	38,077 18	-	-	45,159 17	840 83
Maj. Henry Whiting -	Road from Detroit to Fort Gratiot -	4th qr 1836					
		2&3 " 1837	-	-	-	-	31 88
	Road from Detroit to Grand river -	4th qr 1836	2,464 18				
		1st qr 1837	814 59				
		2d qr do	198				
		3d qr do	-	-	-	3,476 77	1,877 20
Henry Smith -	Piers at La Plaisance bay - - -	4th qr 1836					
		3d qr 1837	-	-	-	-	82 12
	La Plaisance bay road - - -	4th qr 1836	-	-	2,194 36	2,194 36	
	Port Lawrence and Adrian road - -	do					
		3d qr 1837	-	-	-	-	18 92

Cleaveland harbor - - - -	4th qr 1836	-	-	3,200			
	1st qr 1837						
	2d qr do						
	3d qr do	-	-	-	3,200		1,884 22
Huron river - - - -	4th qr 1836						
	1st qr 1837						
	2d qr do	-	-	2,096 13			
	3d qr do	-	-	438 85	2,534 98		44 76
Grand river - - - -	4th qr 1836						
	1st qr 1837						
	2d qr do	-	-	4,063 27			
	3d qr do	-	-	-	4,063 27		387 33
Black river - - - -	4th qr 1836						
	1st qr 1837						
	2d qr do	-	-	4,928 10			
	3d qr do	-	-	1,000	5,928 10		1,383 99
Ashtabula creek - - - -	4th qr 1836	-	-	1,787 55			
	1st qr 1837						
	2d qr do	-	-	60 75			
	3d qr do	-	-	-	1,848 30		
Cunningham creek, Ohio - - -	1st qr 1837	-	-	50			
	2d qr do	-	-	3,926 32			
	3d qr do	-	-	500	4,476 32		573 68
Presque Isle harbor, Pennsylvania -	4th qr 1836	-	-	3,787 62			
	3d qr 1837	-	-	1,302 35	5,089 97		
Dredging machine for Lake Erie - -	1st qr do	3,875					
	2d qr do	7,107					
	3d qr do	-	-	-	10,982		3,470 87
Black Rock harbor, New York - -	4th qr 1836	-	-	850			
	1st qr 1837						
	2d qr do						
	3d qr do	-	-	-	850		196 97
Dunkirk harbor, do - -	4th qr 1836	-	-	2,000			
	1st qr 1837						
	2d qr do	-	-	1,567 49			
	3d qr do	-	-	-	3,567 49		815 13
Buffalo harbor, do - -	4th qr 1836						
	1st qr 1837						

No. 2—Continued.

NAMES.	Designation of the objects of disbursements.	For whal period.	Amount accounted for.				
			Amount expended in each quarter.	Amount refunded, or returned to the Treasury.	Am't turned over to successors.	Total amount accounted for.	Balance on hand, 30th September, 1837.
Henry Smith -	Buffalo harbor, New York - -	2d qr 1837					
		3d qr do	-	-	-	-	$537 84
	Beacon-light at Grand river - -	4th qr 1836					
		1st qr 1837					
		2d qr do	-	-	$466 04	$466 04	
	Beacon-light at Ashtabula creek - -	4th qr 1836	-	-	1,267 76	1,267 76	
	Beacon-light at Black river - -	do					
		1st qr 1837					
		2d qr do					
		3d qr do	-	-	266	266	
	Beacon-light at Huron river - -	4th qr 1836					
		3d qr 1837	-	-	20 20	20 20	
	Harbor near the mouth of river Raisin, M.	4th qr 1836	-	-	1,706 77		
		1st qr 1837	$1,188 58				
		2d qr do	-	-	12,334 25		
		3d qr do	-	-	2,500	17,729 60	
Lt. R. C. Smead -	Oswego harbor, New York - -	4th qr 1836	2,338 73	2,993 43			
		3d qr 1837	22,033 07	-	-	27,365 23	2,751 35
	Light-house at Oswego - - -	4th qr 1836	297 18	9 52			
		3d qr 1837	724 32	-	-	1,031 02	
U. G. White -	Oswego harbor - - - -	2d qr do	-	-	2,490 78	2,490 78	4,309 22
Gen. Jos. G. Swift -	Improvement at Big Sodus bay -	4th qr 1836	5,102 54				

		1st qr 1837	2,191 42				
		2d qr do	5,492 10				
		3d qr do	8,226 48	-	-	21,012 54	
	Improvement at Genesee river - -	4th qr 1836	2,370 17				
		1st qr 1837	975 37				
		2d qr do					
		3d qr do	-	-	-	3,345 54	1,790 23
	Improvement of harbor at the mouth of Oak Orchard creek.	4th qr 1836					
		3d qr 1837	-	-	-	-	773 86
	Beacon-lights at Sodus bay and Genesee river.	4th qr 1836					
		3d qr 1837	954 57	-	-	954 57	1,180 13
Capt. Jas. Allen -	Chicago harbor, Illinois - - -	4th qr 1836	16,672 75	1,846 04			
		1st & 2d '37	9,959 40				
		3d qr 1837	21,678 49	-	-	50,156 68	7,208 15
Lt. J. G. Barnard -	Pascagoula river - - - -	4th qr 1836	-	3,001 16	-	3,001 16	
Lt. Jno. H. Winder -	Fort Caswell - - - -	4th qr do	-	-	47 36	47 36	
	Cape Fear river - - - -	4th qr do	-	-	581 12	581 12	
Maj. H. Saunders -	Cape Fear river - - - -	4th qr do	-	-	15 20	15 20	
Lt. Jno. L'Engle -	Fortifications Charleston harbor - -	4th qr do					
		1st qr 1837	1,288 72	-	-	1,288 72	
Lt. T. B. W. Stockton	Road from Detroit towards Chicago -	4th qr 1836	-	-	4,420 59	4,420 59	
	Road from Detroit to Saginaw bay -	4th qr do	-	-	3,661 95	3,661 95	
	Road from Sheldon's to St. Joseph's river -	4th qr do	-	-	1,207 19	1,207 19	
	Road from Niles's to St. Joseph's river -	4th qr do	-	-	2,979 97	2,979 97	
	Road from Clinton to Grand river -	4th qr do	-	-	721 47	721 47	
Lt. E. S. Sibley -	Road from Detroit towards Chicago -	4th qr do	801 75	-	3,659 53	4,461 28	
	Road from Detroit to Saginaw bay -	4th qr do	278 66	-	3,383 29	3,661 95	
	Road from Sheldon's to St. Joseph's river -	4th qr do	-	-	1,107 58	1,107 58	
	Road from Niles's to St. Joseph's river -	4th qr do	-	-	2,979 97	2,979 97	
	Road from Clinton to Grand river -	4th qr do	-	-	721 47	721 47	
Maj. B. K. Pierce -	Road from Detroit towards Chicago -	3d qr 1837	2,890 47	-	-	2,890 47	769 06
	Road from Detroit to Saginaw bay -	3d qr do	1,754 10	-	-	1,754 10	1,629 19
	Road from Sheldon's to St. Joseph's river -	3d qr do	733 15	-	-	733 15	374 43
	Road from Niles's to St. Joseph's river -	3d qr do	2,410 90	-	-	2,410 90	569 07
	Road from Clinton to Grand river -	3d qr do	216 77	-	-	216 77	504 70

No. 2—Continued.

NAMES.	Designation of the objects of disbursements.	For what period.	Amount accounted for.				
			Amount expended in each quarter.	Amount refunded, or returned to the Treasury.	Am't turned over to successors.	Total amount accounted for.	Balance on hand, 30th September, 1837.
Capt. H. A. Thompson	Fort McHenry, Redoubt Wood, and Covington battery	4th qr 1836	$24,165 02				
		1st qr 1837	5,755 33				
		2d qr do	9,019 86				
		3d qr do	9,728 10	-	-	$48,668 31	
	Incidental expenses attending repairs of fortifications, &c.	4th qr 1836	14,641 54				
		1st & 2d'37					
		3d qr do	5,004 18	-	-	19,645 72	$6,821 34
Bank of Troy - -	Hudson river, improvement of - -	4th qr 1836	56,733 76				
		1st qr 1837	15,375 39				
		2d qr do	18,758 26				
		3d qr do	42,469 47	-	-	133,336 88	20,119 49
Moyamensing Bank -	Fort Delaware, - - - - -	4th qr 1836	18,604 90				
		1st qr 1837	15,579 89				
		2d qr do	17,490 15				
		3d qr do	28,763 76	-	-	80,438 70	26,453 71
	Delaware breakwater - - -	4th qr 1836	43,501 98				
		1st qr 1837	4,604 39				
		2d qr do	44,040 20				
		3d qr do	85,183 31	-	-	177,329 88	650 67
	Newcastle harbor - - - -	4th qr 1836	8,268 65				
		1st qr 1837	3,290 71				
		2d qr do	5,625 20				

		3d qr do	7,051 37	-	-	24,235 93	166 82
	Harbor of Chester - - - -	4th qr 1836	1,762 45				
		2d qr 1837	394 62				
		3d qr do	1,150 10	-	-	3,307 17	455 28
	Incidental expenses attending repairs of fortifications, &c.	4th qr 1836	17,042 54				
		1st qr 1837	4,220 43				
		2d qr do	4,214 35				
		3d qr do	8,967 96	-	-	34,445 28	1,579 27
	Mooring buoys at the Delaware breakwater	2d qr do	1,793 56	-	-	1,793 56	206 44
Clinton Bank, Ohio, Columbus	Cumberland road in Ohio - - -	4th qr 1836					
		2d qr 1837	-	-	$592 89	592 89	
Merchants' Bank, Boston	Fort Warren - - - -	4th qr 1836	-	-	6,747 05	6,747 05	
		2d qr 1837					
	Repairs at Fort Independence, &c. -	4th qr 1836	-	-	667 57	667 57	
	Sea-wall at Deer island - - -	do	-	-	1,130	1,130	
	Incidental expenses attending repairs of fortifications, &c.	do	-	-	5	5	
Merchants and Mechanics' Bank, Wheeling.	Cumberland road east of the Ohio river -	do	1,138 48	-	-	1,138 48	
Merchants and Manufacturers' Bank, Pittsburg	Cumberland road, east of the Ohio river -	4th qr 1836	10,789 79				
		1&2 " 1837	15,068				
		3d qr do	12,051 41	-	-	37,990 20	221 66
	Cumberland road in Ohio - - -	4th qr 1836	68,136 25				
		1st qr 1837	27,926 67				
		2d qr do	67,918 02				
		3d qr do	70,817 43	-	-	234,798 37	10,737 44
	Improving the Ohio river between Pittsburg and the falls - - -	4th qr 1836	22,706 78				
		1st qr 1837	14,924 39				
		2d qr do	30,728 90				
		3d qr do	36,298 98	-	-	104,659 05	1,441 89
Newport Exchange Bank	Fort Adams - - - -	4th qr 1836	50,841 84				
		1st qr 1837	15,922 12				
		2d qr do	39,734 11				
		3d qr do	42,864 72	-	-	149,362 79	5,607 79
	Light-house on Goat island - -	2d qr do	7,287 44				
		3d qr do	3,339 63	-	-	10,627 07	2,555 30

No. 2—Continued.

NAMES.	Designation of the objects of disbursements.	For what period.	Amount accounted for.				
			Amount expended in each quarter.	Amount refunded, or returned to Treasury.	Amount turned over to successors.	Total amount accounted for.	Balances on hand 30th September, 1837.
Henry M. Shreve -	Mississippi river, above the mouth of the Ohio river, and the Missouri river -	4th qr 1836	$1,998 11				
		1st qr 1837	1,959 50				
		2d qr do	15,077 34				
		3d qr do	62 68	-	-	$19,097 63	$2,860 87
	Ohio and Mississippi rivers, from Louisville to New Orleans - - -	4th qr 1836	4,752 89				
		1st qr 1837	12,451 57				
		2d qr do	40,504 23				
		3d qr do	2,969 11	-	-	60,677 80	7,154 63
	Improving the Red river - - -	4th qr 1836	17,507 48				
		1&2 " 1837	47,819 30				
		3d qr do	124 21	-	-	65,450 99	
	Constructing and working boat on Red river	1st qr do	22,436 93				
		3d qr do	7,544 71	-	-	29,981 64	18 36
	Improving the Arkansas river - -	1st qr do	13,427 45				
		2d qr do	10,581 98				
		3d qr do	6,036 07	-	-	30,045 50	26,984 50
Ezra Crowell - -	Hyannis harbor - - - - -	4th qr 1836	669 16				
		1&2 " 1837	1,784 18				
		3d qr do	2,431 72	-	-	4,885 06	834 06
Thomas M. Clark -	Merrimack river - - - - -	4th qr 1836					
		3d qr 1837	75 60	-	-	75 60	3,985 21
Asa S. Bowley -	Provincetown harbor - - -	4th qr 1836					
		1&2 " 1837	4,481 22	-	-	4,481 22	91 09

S. Sampson - -	Plymouth beach - - - -	4th qr 1836	200 40						
		1st qr 1837	12 48						
		2d & 3d '37	56 62	-	-	269 50	161 58		
A. W. Walworth -	Cleaveland harbor - - - -	4th qr 1836	8,482 82						
		1st & 2d '37	5,109 97						
		3d qr 1837	4,254 34	-	-	17,847 13	1,352 87		
Henry Phelps - -	Grand river - - - -	4th qr 1836	950 97						
		2d qr 1837	327 86	-	$1,346 03	2,624 86			
	Beacon-light at Grand river - -	3d qr do	48 03	-	418 01	466 04			
Jno. A. Potter - -	Grand river improvement - -	2d qr do	3,096 60						
		3d qr do	2,637 30	-	-	5,733 90	656 51		
	Beacon-light at Grand river - -	3d qr do	33 08	-	-	33 08	384 93		
P. S. V. Hamot -	Presque Isle harbor - - -	4th qr 1836	3,475 85						
		1st qr 1837	1,050 24						
		2d qr do	5,729 37						
		3d qr do	10,004 19	-	-	20,259 65	706 82		
Henry Desbrow -	Improvement of harbor near river Raisin	4th qr 1836	2,350 15						
		1st qr 1837	67 77	-	389 94	2,807 86			
N. D. Curtis - -	Improvement of harbor near river Raisin	2d qr do	8,038 40						
		3d qr do	14,423 43	-	-	22,461 83	7,232 76		
Ashbel Dart - -	Conneaut creek - - - -	4th qr 1836	1,405 01						
		2d qr 1837	1,992 49						
		3d qr do	2,751 91	-	-	6,149 41	580 96		
M. Hubbard - -	Ashtabula creek - - - -	4th qr 1836	2,250 41						
		2d qr 1837	2,178 86						
		3d qr do	2,086 29	-	-	6,515 56	3,971 44		
	Beacon-light at Ashtabula creek - -	4th qr 1836	606 63						
		1st qr 1837	619 07						
		2d qr do	20 85						
		3d qr do	21 21	-	-	1,267 76			
Jno. Tull - -	Black river, Ohio - - - -	4th qr 1836	3,442 32	-	-	3,442 32			
	Beacon-light at Black river - -	4th qr do	1,220 90	-	-	1,220 90			
Thomas Forster -	Dunkirk harbor - - - -	4th qr do	2,512 76						
		1st qr 1837	1,095 34						
		2d qr do	6,491 49						
		3d qr do	10,902 81	-	-	21,002 40	1,867 15		
P. B. Porter - -	Black Rock harbor - - -	4th qr 1836	545 94	-	-	545 94	304 06		

No. 2—Continued.

NAMES.	Designation of the objects of disbursements.	For what period.	Amount accounted for.				
			Amount expended in each quarter.	Amount refunded, or returned to the Treasury.	Am't turned over to successors.	Total amount accounted for.	Balance on hand, 30th September, 1837.
W. McKnight - -	Cumberland river below Nashville -	4th qr 1836	$3,625 58				
		1st qr 1837	3,397 16				
		2d qr do	6,988 38				
		3d qr do	8,125 39	-	-	$22,136 51	
	Cumberland river above Nashville -	3d qr do	19,049 38	-	-	19,049 38	$1,950 62
F. L. Dancy - -	Repairs at Fort Marion, &c. - -	4th qr 1836	6,901 05				
		1st qr 1837	11,215 78				
		2d qr do	13,981 31				
		3d qr do	5,538 33	-	-	37,636 47	813 53
James S. Johnson -	Fortifications in Charleston harbor, &c. -	do	2,825 02	-	-	2,825 02	1,994 98
William Robinson -	Harbor of Baltimore - - -	4th qr 1836	9,763 12				
		1st & 2d '37	8,979				
		3d qr do	6,396	-	-	25,138 12	144 88
William Chandler -	Harbor of Wilmington - - -	4th qr 1836	3,768 17				
		1st qr 1837	4,799 13				
		2d qr do	3,855 72				
		3d qr do	3,558 28	-	-	15,981 30	1,018 70
Joshua Herrick -	Piers at Kennebunk - - -	4th qr 1836	}				
		1st qr 1837	836 66				
		2d qr do	}				
		3d qr do	2,187 24	-	-	3,023 90	4,474 42
Jeremiah Sturges	Harbor of Southport - - -	4th qr 1836					

		2d qr 1837	876 64					
		3d qr do	1,169 50	-	-	2,046 14		
Josiah Haskell - -	Improvement at Sandy bay - - -	4th qr 1836	1,216 59					
		1st qr 1837	4,975 62					
		2d qr do	12,580 05					
		3d qr do	-	-	-	18,772 26	7,677 69	
Freeman Bradford -	Breakwater at Stanford ledge, Portland harbor	1st qr do	3,275					
		2d qr do	5,609 68					
		3d qr do	15,022 87	-	-	23,907 55	11,092 45	
Marshall Parks -	Improvement at the Dismal Swamp canal	1st qr do	2,425 15					
		2d qr do	3,187 25					
		3d qr do	1,020 23	-	-	6,632 63	1,167 37	
W. P. Eaton - -	Improvement in the river Thames, Conn.	4th qr 1836	3,443 46					
		1st qr 1837	1,034 87					
		2d qr do	5,119 41					
		3d qr do	11,217 37	-	-	20,815 11	698 91	
Ezra Coe - -	Harbor of Church's cove - - -	1st qr do						
		2d qr do						
		3d qr do	3,979 62	-	-	3,979 62	2,532 38	
L. G. Sampson -	Improvement near Duxbury harbor -	4th qr 1836	1,698 70					
		1st qr 1837	65 68					
		2d qr do	117 92					
		3d qr do	264 84	-	-	2,147 14	2,449 72	
D. K. Akin - -	Improvement at Bass river - -	2d qr do	4,426 55					
		3d qr do	3,430 95	-	-	7,857 50		
P. G. Munro - -	Fort Warren - - - -	4th qr 1836	32,579 51					
		1st qr 1837	9,003 18					
		2d qr do	43,580 62					
		3d qr do	69,155 55	-	-	154,318 86	8,765 69	
	Repairs at Fort Independence - -	4th qr 1836	4,714 42					
		1st qr 1837	2,595 70					
		2d qr do	25,062 75					
		3d qr do	36,460 58	-	-	68,833 45	23,934 32	
	Preservation of Deer island - -	4th qr 1836	976 32					
		1&2 " 1837						
		3d qr do	-	-	-	976 32	153 68	
	Incidental expenses attending repairs of fortifications, &c. - - -	4th qr 1836	125 80					
		2d qr 1837	-	-	-	125 80		

No. 2—Continued.

NAMES.	Designation of the objects of disbursements.	For what period.	Amount accounted for.				
			Amount expended in each quarter.	Amount refunded, or returned to the Treasury.	Am't turned over to successors.	Total amount accounted for.	Balance on hand 30th September, 1837.
John T. Gibbs -	Piscataqua river, deepening the Cocheco branch of - - - -	4th qr 1836	$208 84				
		2d qr 1837	386 84				
		3d qr do	3,750 66	-	-	$4,346 34	$1,034 42
John J. Wendell -	La Plaisance bay road - - -	4th qr 1836	656				
		2d qr 1837	390 66				
		3d qr do	868 76	-	-	1,915 42	
John B. Wilbor -	Huron river - - - -	4th qr 1836	1,063 45				
		1st qr 1837	30 09				
		2d qr do	2,913 40				
		3d qr do	2,433 08	-	-	6,440 02	
	Beacon-light at Huron river - -	3d qr do	20 20	-	-	20 20	
Conrad Reid - -	Black river - - - -	2d qr do	3,914 59				
		3d qr do	1,463 74	-	-	5,378 33	549 77
	Beacon-light at Black river - -	3d qr do	144 68	-	-	144 68	
James C. Loomis -	Harbor of Westport - - -	1st qr do	1,437 15				
		2d qr do	794 25				
		3d qr do	360 22	-	-	2,591 62	1,408 38
	Cedar point - - - -	3d qr do	400	-	-	400	100
Robert Harper -	Cunningham creek - - -	2d qr do	2,999 06				
		3d qr do	1,715 53	-	-	4,714 59	
Isaac S. Smith - -	Harbor of Buffalo - - - -	4th qr 1836	6,647 14				
		3d qr 1837	4.237 66	-	-	10,884 80	
Samuel Simons -	Harbor of Bridgeport - - -	2d qr do	2,818 35				

Thomas Bartram -	Fairweather island - - -	3d qr do	6,039 65	-	-	8,858	1,142
		1st qr do	14 59				
		2d qr do	2,793 69				
		3d qr do	6,866 20	-	-	9,674 48	325 52
D. Lane - -	Placing buoys in the vicinity of the monument on Steele's ledge - - - -	2d qr do	-	-	-	-	630 78
Alexander Parris -	Preservation of Rainsford island, Boston harbor - - - - - -	4th qr 1836	6,001 60				
		2d qr 1837					
		3d qr do	-	-	-	6,001 60	8,998 40
John Price - -	Removing wreck in the harbor of New Bedford - - - - - -	2d qr do	2,453 32	-	-	2,453 32	191 37
			2,926,739 48	7,939 84	94,216 84	3,028,896 16	599,303 71

No. 3.

Statement exhibiting the works projected by the Board of Engineers, which have not been commenced, and the estimate of their cost.

Designation of the works.	Estimate.
First class: to be commenced as soon as possible.	
Fort St. Philip, Louisiana	$77,810 79
Fort at Soller's Point flats, Patapsco river	673,205 44
Fort Tompkins, New York	420,826 14
Redoubt in advance of do.	65,162 44
Fort at Wilkins's point, New York	456,845 51
Fort at Dumpling's point, Rhode Island	759,946 57
Fort at Rose island, do.	82,411 74
Dike across the west passage, Narragansett roads, for the defence of Newport harbor	205,000 00
Fort on Nantasket head	539,000 00
Lunette in advance of do.	79,000 00
Redoubt No. 2 in advance of do.	32,000 00
Redoubt No. 1 (on Hog island) in advance of do.	29,000 00
Dike across Broad Sound passage	140,000 00
Cutting off the summit of Gallop island	2,429 00
Narragansett bay, Rhode Island (works for the defence of Conanicut island)	220,053 43
	3,782,691 06
Second class: to be commenced at a later period.	
Tower at Pass-au-Heron, Mobile bay	16,677 41
Fort at Hawkins's point, Patapsco river	244,537 14
Fort at St. Mary's, Potomac river	205,602 33
Fort opposite the Pea Patch, Delaware river	347,257 71
Fort at the middle-ground, outer harbor of New York	1,681,411 66
Fort at the east bank, do. do.	1,681,411 66
Fort Hale, Connecticut	31,815 83
Fort Wooster, do.	27,793 34
Fort Trumbull, do.	77,445 21
Fort Griswold, do.	132,230 41
Fort on Fort Preble point, Portland harbor, Maine	103,000 00
Fort on House island, do. do.	32,000 00
Fort Pickering, Salem	116,000 00
Fort for Nawgus head	35,000 00
Fort Seawell, Marblehead	116,000 00
Fort for Jack's point	96,000 00
Fort on Bald head, North Carolina	120,000 00
Fort on Federal point, do.	12,000 00
	5,075,982 70

No. 3—Continued.

Designation of the works.	Estimate.
Third class : to be commenced at a remoter period.	
The rafts to obstruct the channel between Forts Monroe and Calhoun - - - - -	$240,568 00
Fort on Craney island flats - - - -	258,465 14
Fort at Newport News - - - -	244,337 44
Fort at Naseway shoal, for the defence of Patuxent river	673,205 00
Fort on Thomas's point - - - -	173,000 00
Fort on Point Patience - - - -	164,000 00
Fort on the narrows of Penobscot, Maine - -	101,000 00
	1,854,575 58
RECAPITULATION.	
First class (15) - - - - -	3,782,691 06
Second class (18) - - - - -	5,075,982 70
Third class (7) - - - - -	1,854,575 58
	10,713,249 34

Remark.—The classification in this table, distinguishing three periods, exhibits the works enumerated in the order of their efficiency to meet the earliest possible emergency.

REPORTS OF OPERATIONS BY THE ENGINEER CORPS.

A.

ANNUAL REPORT, 1837.—HARBORS ON LAKE ERIE.

OFFICE OF SUPERINTENDENT OF PUBLIC WORKS, LAKE ERIE,
Monroe, Michigan, September 30, 1837.

SIR: The general supervision of the works at Black Rock, Buffalo, and Dunkirk, New York, and Erie, Pennsylvania, was, in pursuance of the arrangement of the Engineer department, surrendered to Thompson S. Brown, Esq., on the 1st May last. I shall, therefore, confine this report to the subject of the works on the western portion of Lake Erie, to wit: at the mouth of the river Raisin, Michigan, and Huron, Black river, Cleaveland, Grand river, Cunningham creek, Ashtabula, and Conneaut, Ohio.

Until the commencement of the system of improvement of the lake harbors by the Government of the United States, the immense extent of country occupying the south shore of Lake Erie, or dependent on it for commercial facilities, was a wilderness. The navigation of the lake was attended with the utmost delay, difficulty, and danger. The mouths of the several streams emptying themselves into the lake were uniformly obstructed by sand and vegetable matter, creating stagnant bodies of water which overflowed the lowlands for miles, generating an atmosphere which rendered the country nearly uninhabitable from disease; at the same time that the streams themselves were entirely inaccessible as a refuge for vessels, and in all respects an evil rather than a benefit to the surrounding country. It is almost unnecessary to say that the judicious improvements made under the acts of Congress have entirely changed all this; and many millions of acres of land of the most fertile description, embracing the western portion of the State of New-York, the northern part of Pennsylvania, Ohio, Indiana, and Illinois, and the whole of Michigan, owe their present settlement and improvement, in a very great degree, to this cause. These improvements have also been the direct cause of the unexampled sales of the public lands in the Northwestern States and Territories, lying along or dependent on the great lakes for their principal means of access and commerce. The mouths of the Huron, Black river, Cuyahoga, Grand river, Ashtabula, and Conneaut, (across each of which the beach of the lake was continuous, and the only drain for which was by filtration through the sand,) were opened, and kept open by piers and other improvements; beacon light-houses have been erected, and these streams, as well as other works at the east end of the lake, now afford secure harbors, accessible at all times to vessels navigating the lake. The improvement at the mouth of the Raisin, the only one on Lake Erie within the State of Michigan, is of similar character, though from its greater difficulties it has been rather more expensive.

These works, originally but experiments, though now found so admirably to answer the purpose for which they were designed, were built

of perishable materials; it is *generally* to render them permanent, that the appropriations are recommended on the estimates for the coming year. The nature of the permanent improvement is to remove the wood-work of the piers, already much decayed, to the depth of two feet below low-water mark, and erect on the old foundation a superstructure of stone. Unless this course is adopted without delay, the action of time and the elements will speedily render useless all that has been found of such vast benefit to the commerce of the West. This has been done at Buffalo heretofore, and has, since my last report, been, under the appropriation of last year, fairly commenced at Cleaveland. By using the old work as a foundation, permanent works may be erected, at comparatively small cost, sufficient to defy the action of the elements for ages; but I beg leave to urge again, that *the commencement should not be delayed for a moment.*

Although the water of the lake continues at its unusually high stage, yet, in consequence of having received the appropriations for the works early in the season, it has been found practicable to expend the several sums with very great advantage and economy. About one-third more work has been done for the same amount of cost this year than was done during the last year, at every work on the lake. The months of June and July, and perhaps August, is the season of the most calm weather on the lake, and work can be prosecuted with greater regard to economy, as well as despatch, in those months, than at any other season. With this view early appropriations are respectfully and earnestly recommended.

With the foregoing general remarks, I beg leave to offer the report of the condition and progress of each work.

1. *River Raisin harbor, Michigan.*—This work has been diligently prosecuted on the original plan heretofore submitted to the department. The piling along the sides of the canal is complete in its whole length, and the caps framed and placed thereon. The sheet-piling is also entirely complete, except in the distance of 198 feet, which space will also be finished within this month. About 25,000 yards of earth in the canal have been excavated and removed; a portion of this it was found advantageous to *blast*, in the solid and indurated clay. The canal will be completed this season, except about 800 feet of its length, making complete this season 3,387 feet. To effect this, the steam dredging machine is relied on to remove the earth remaining in the portion of the work inundated in 1836—about 16,000 cubic yards. The piers have been carried out to the depth of 10 feet of water in the lake. The pier on the south side of the entrance is 597 feet in length, and that on the north is 515 feet long. They are decidedly the best constructed piers which I have seen on Lake Erie, made agreeably to the plan submitted by me heretofore to the department. The stone has been principally quarried and transported to the work by the laborers. It is deemed necessary to construct 200 feet of additional pier-work on each side, which will attain a depth of 12 feet of water. An estimate for a beacon light-house, to be placed on the south pier-head, is submitted herewith. The machinery for this work, which has (much of it) been completed since my last report, is excellent.

Estimating the condition in which the expenditure of the entire appro-

priation for the present year will leave the work, I submit herewith an estimate for its completion, marked A No. 1; also, estimate for a beacon. A drawing of the work, exhibiting its present condition, is also submitted herewith.*

In anticipation of the immediate completion of this harbor, the State of Michigan has passed a law for the construction (by the State) of a railroad from this harbor to New Buffalo, on Lake Michigan, and the road is already commenced. In addition to this, this point appears to be the centre of the commerce of an extended and densely populated country. Railroads are about to be constructed, under charters already granted by this State; one from this place to the navigable waters of the Grand river, a second from this to Ypsilanti, a third to Ann Arbor, a fourth to Detroit, a fifth to the Ohio line, and a sixth to La Plaisance bay. This is furthermore the radiating point for no less than eight ordinary roads, penetrating a country perhaps not excelled in the world for fertility and excellence of soil. The rapidly increasing population is the strongest proof of this: Monroe city has trebled its population within three years; it contains now upwards of three thousand inhabitants.

2. *Huron harbor, Ohio.*—Operations were commenced this season in the month of May, and continued during that month, June, and July, with vigor. Two hundred and ninety feet of the pier-work, which was greatly decayed, (200 on the west and 90 feet on the east pier,) have been taken up to below the surface of the water and rebuilt entirely with new timber, filled anew with stone, and principally planked over; the residue will be planked this season. Sixty feet more of the east pier is also taken up, being entirely decayed, and is in process of repair. It is believed that it will be completed this month, as stone and timber sufficient are on hand. In addition to these labors, stone in large quantities has been purchased and placed on the outside of the west pier, as the commencement of the construction of a permanent work; and to a continuation of this the coming year, after driving a row of contiguous piles at twenty feet outside the work, to render the inclined plane firm and immoveable, the attention of the department, it is respectfully recommended, should be directed; and for this purpose, as well as for the removal of a small bar, I respectfully submit the estimate marked A No. 2.

Accompanying is a drawing, exhibiting the present condition of the work.*

3. *Black river harbor, Ohio.*—The sum appropriated at the last session of Congress ($6,410) for this work, has nearly been expended on the objects of the estimate for 1837, and will probably all be expended before the close of the season. The requisite repairs have been made in both the piers, and the portions of the work filled where the stone had been carried away by the storms of the last year, particularly in the eastern pier. About 306 cords of stone have been purchased and deposited along the outside of the piers, principally at the points indicated in the drawing. The object of this is twofold: to protect the present work from the violence of the northeast storms, which have heretofore injured it; and, secondly, laying the foundation of additional width for the permanent work. Both these objects are attained. The dredging has been carried on to as great an extent as the high waters of the lake will allow;

* The drawings and maps referred to in this document are omitted to be printed, under the order of the House of Representatives of September 11, 1837.

though the same cause which *prevents* dredging, (to wit, the very high water,) also renders it *at present* nearly unnecessary.

To continue the erection of a permanent harbor, by widening the foundation of the old work, and depositing stone betwixt the piers and a row of contiguous piles to be driven, estimate A No. 3 is herewith submitted. An item is also inserted for the removal of the remains of the gravel-bar, by means of the newly-constructed steam dredging machine, a very necessary improvement. I also forward a drawing by the local agent, designed to exhibit the present condition of the work.

4. *Beacon light-house, Black river.*—This work was not finished during the fall of 1836, as was confidently anticipated; but, as the department has been already advised, no censure should fall on any person for the delay. The season was unusually stormy in the months of October and November. After the work was entirely framed, a constant watch was kept for such weather as would permit the sinking of the foundation; and the first favorable moment was seized, and as many hands employed in sinking as could work to advantage. The labor was continued until midnight, when a storm arose, which scattered our materials in all directions, and completely destroyed the result of our labors. The materials were again collected, and a new attempt made, with better success, so that our foundation was sunk without further accident. The light-house was finished early in this season, and is one of *the best* structures of the kind on the lake. It is placed on the west pier-head, framed and sunk expressly for the purpose, and secured very strongly by stone and piles; to the latter of which the timbers of the light-house are thoroughly bolted and secured. The cost, after placing to the account of the pier what might very properly be charged to it, has not exceeded the appropriation.

5. *Cleaveland harbor, Ohio.*—The labors on this work have been directed to the purpose for which the appropriation on the estimate for 1837 was made, to wit: constructing a permanent stone work on the foundation of the wooden piers forming the mouth of this harbor. The materials procured and on hand last fall have been used, as well as a large amount purchased this season. From the head of the eastern pier entirely to the shore, stone has been deposited on the outside; the base equalling twice the altitude; and thus, the surface forming an inclined plane, extending from the bottom to above the surface of the water. The wooden superstructure, commencing at the inner end of this pier, has been removed to the depth of two feet below the surface of the water, and replaced by the permanent work; large rectangular blocks of stone, the faces of which are of uniform thickness in each course, strongly dowelled together, cramped where it is necessary, and the whole laid in hydraulic cement. The work is thoroughly grouted, and a very excellent coping surmounts the whole. This is nearly finished 180 feet in length, and that distance will be entirely finished this fall. On the western side a row of contiguous piles has been driven, at the distance of 30 feet from the outside of the pier, commencing at the pier-head and extending towards the shore 350 feet. In prosecuting this work, it has been necessary to avail ourselves of the favorable weather, as it is impossible to make use of the pile-machine in bad weather. The space between this row of piles and the pier is also entirely filled with stone, the surface of which forms an inclination, from two feet below the surface of the water

at the piles, to the surface at the pier. This, with some repairs of the decayed wood-work of the old piers, so as to render them serviceable until they can be permanently rebuilt, enumerates the labor on this work during the season. The finished portion is well, serviceably, and durably done, and not a doubt exists that it will answer the purpose for ages without material repair or other expense.

Cleaveland is a point of great importance, not only to the State of Ohio, but in the commerce of the whole West and Northwest. Its position, as well as the improvements of the State of Ohio, and of private companies, all tending to this point, render it the thoroughfare for an immense amount of commerce, as well as the depot for very large quantities of produce destined for Eastern markets, and of merchandise to supply the Western States. The great canal through the State of Ohio, from the Ohio river, enters Lake Erie at this place; another canal is nearly completed by the States of Pennsylvania and Ohio, connecting Cleaveland directly with Philadelphia; railroads, also in progress, will speedily connect Cleaveland with Baltimore, with Pittsburg, with Buffalo, and Detroit. Another railroad, from Cleaveland to Euclid, Ohio, is now being constructed. This last work, it is believed, will materially aid the work at Cleaveland harbor, by furnishing excellent stone at reduced prices. Turnpike roads along the lake, and others extending interior in every direction, centre here.

Estimate marked A No. 4 is submitted herewith, and an appropriation of the whole amount respectfully recommended.

6. *Grand river harbor, Ohio.*—The operations on this work have been directed to the following objects: 1st, rebuilding and repairing the damages sustained in the storms of previous years; 2d, securing, so far as possible, the work against similar injuries from the same cause; and 3d, commencing preparations for the *permanent* work, on the foundation of the present. It was found necessary to remove the damaged and useless cribs on the end of the west pier, to the depth of from six to nine feet under the water, they being broomed or torn to pieces to that depth, (five in number,) in a distance of 150 feet, and so shattered that no good foundation could be found on which to rest the new work. The stone had (as has been heretofore reported) been thrown by the action of the lake out of the work and over the pier, to the outside, where (it being useful at present, as well as precisely in position for the permanent work) it now remains. The timber was removed until a fair surface was found, the cribs framed and sunk thereon, and firmly secured to the old work by strong iron bolts, passing through each timber of the new and three or four feet into the old work. These cribs were then loaded with stone, and thoroughly secured with piles, caps, and planks. The storms this fall have been violent, but the work remains uninjured. In several portions (as marked on the sketch herewith) of the old work, repairs had become imperiously necessary: at one point, on the east pier, marked on the sketch *c d*, one hundred and twenty feet of decayed and shattered wood-work was removed to below the surface of the water, and rebuilt with new materials, and again filled with stone and secured; at another point on the west pier, the old work has been removed in the whole distance of 300 feet, of the upper course of timber, ties, sleepers, and plank, and replaced by new work, well placed and secured. At several other points the necessary repairs have been made. Some very serviceable

machinery has been constructed during the season, amongst which is an excellent crane-scow.

It is found on examination this season, that portions of the piers (also indicated on the sketch) have been undermined on the inner (or river) side, and assumed an inclination inwards, displacing the piles &c.; stone has been thrown on brush placed at these points, and is found in a great degree to arrest the progress of this injury. A further deposite of stone and brush is absolutely necessary the coming season; this, while securing the present work, is a necessary step in prosecuting the permanent work. For completing these repairs, now absolutely necessary, and for continuing the permanent work, I have the honor herewith to submit estimate A No. 5, and to recommend the appropriation thereon. A drawing is also enclosed, by the local superintendent of this work.

Grand river, as a place of refuge for vessels on Lake Erie, appears to meet the preference of the navigators of the lake. Its central situation, great width of entrance, and its depth, all tend to render it a very desirable harbor. It is the natural port to which the commerce of a very fine district of country irresistibly tends. Being the point on Lake Erie as near the Ohio river as any other, with the advantages above mentioned, as might be anticipated, its commerce and its importance rapidly increase. A railroad from the Ohio river (the Fairport and Wellsville) terminates at this point; it is in process of construction, and three miles nearest this harbor completed.

7. *Harbor at Cunningham creek, Ohio.*—This work differs materially from all the foregoing in its character. Although being formed at the mouth of a stream, yet that stream is so inconsiderable, that not the slightest benefit is derived from its action in forming or continuing a harbor. The shore of the lake, however, is more declivitous at this point than at any other within my knowledge. The water, as is shown by the accompanying map of a survey, attains depth sufficient for any vessel on the lake, at about 150 feet from the shore. In forming this harbor, after creating a shelter for vessels, the object has been, not as in other works, to interrupt the currents of the lake and arrest the sand suspended therein, but to erect a structure which should be a protection against the winds, and at the same time allow the currents of the lake, produced by those winds, to pass uninterruptedly, and thus maintain the original depth of water, without depositing the sand against the piers. Two piers running into the lake, the outer ends approaching each other, with a breakwater (solid) protecting their front, and running nearly parallel with the shore, were designed; the piers running from the shore, composed of separate cribs or blocks of timber loaded with stone, and secured at distances from each other about equalling their length, and connected with each other by bridges: thus allowing, as before stated, the water to flow uninterruptedly betwixt these blocks or piers.

This season the eastern pier has been commenced at the shore, and at a distance from the western pier of 608 feet; and has been carried out (so far as to sink and secure the separate blocks or piers) to the length of 590 feet, leaving a vacancy, necessary to be filled by one more crib. Each block or crib is 32 feet in length, built of strong timbers, and secured by posts, iron bolts, and 3-inch tree-nails, and loaded with stone. The bottom being rock, (and of course it being impossible

to secure by piles,) sills of timber 18 inches square and 40 feet long are sunk under the piers, with posts on the outside of the cribs, strongly braced to the sills, and connected over the cribs by caps. The appropriation of last Congress was not sufficient to allow of the completion of this portion of the work, or of the commencement of the breakwater. The connecting bridge-work remains to be constructed the coming year. Some repairs have been found necessary on the western pier, and made accordingly: these consist in replacing decayed planking, and some slight replacing of the timber-work.

To finish the east pier, and to construct the breakwater, without which the work already done is nearly useless, I submit estimate marked A No. 6. A sketch exhibiting the present condition of the work is also herewith forwarded by the local agent, Colonel R. Harper. The appropriation, if made, should be made without delay; and it is believed the work may be completed the coming season. Of the original *necessity* for this work, I was not the judge; but, as the department is aware, found it commenced already, when I assumed my present duties. Being fairly begun, I respectfully recommend its speedy completion. Some important iron-works are situated in the neighborhood of this harbor; which is the point of embarcation and shipment of persons and manufactures connected with those works. The region abounds with iron ore of an excellent quality; and the district is a highly cultivated agricultural one. The great Ohio railroad (along the whole border of Lake Erie) passes within a few yards of this harbor.

8. *Beacon-light at Cunningham creek.*—Some repairs have been made on the light-house from the balance of the appropriation for that work remaining unexpended. These consist principally in strengthening the foundation of the work, in painting the building, &c., and in repairing the roof and sides, so as to render them impervious to the water.

9. *Ashtabula harbor, Ohio.*—The operations on this work have been carried on very satisfactorily during this season. The addition to the west pier, commenced last fall, has been completed this season in the best possible manner for a wooden structure of the kind. The old wood-work of both piers has been carefully repaired at several points and filled anew. Heretofore much injury has been done to this harbor by immense quantities of sand, which, driving along the coast from the west, until arrested by the pier-work, was then thrown up by the action of the waves, became dry, and was then borne by the winds over into the channel. This has been effectually arrested by ranges of brush placed like *abattis*, at from 200 to 500 yards to the west of the work. But the principal and most important labor has been the continuation of the excavation into the rock bottom of this harbor. In place of the comparatively slow and inefficient process of *chiselling* the rock, blasting has been resorted to, with the happiest results. Frequently, at a single blast, as much of the rock has been torn up and broken to pieces, so as to be removed by the dredge, as was loosened by the chisel in several days. The drawing herewith shows the depth of the channel and the amount excavated this season. To complete the excavation, (rock,) which will be easily done the coming year, as well as to commence the erection of the permanent piers, estimate marked A No. 7 is submitted herewith.

Ashtabula is a harbor of considerable consequence, and the port of a populous and important district of Ohio. The great Ohio railroad passes through the village of Ashtabula on its route from the Pennsylvania to the Michigan line.

A railroad from the interior also terminates at this point, about three miles of which is in good progress; and it is the converging point of a number of turnpike roads.

10. *Ashtabula beacon.*—This edifice has been entirely and well completed since my last report, of 1836. It is furnished with colored lights, (red,) and is inferior to no other on the lake.

11. *Conneaut harbor, Ohio.*—The excavation of a basin by widening Conneaut creek sufficiently to allow vessels to turn or *wind*, has been carried on through the season: at first by *dry* excavation, by means of coffer-dams, and subsequently by dredging. About 15,000 cubic yards have been removed, and about 2,000 more will be removed during the fourth quarter of this year. This will be sufficient to enable vessels to *wind*, the original object of this excavation. But it would seem to be desirable that more room should be made to accommodate the number of vessels at times seeking this harbor, and I accordingly offer the estimate of the superintendent, Judge Dart, which I have carefully examined and compared with the prices of labor and materials at that period; but of the necessity of continuing this excavation, I respectfully beg the department to be the judge. That portion of the estimate for repairs I deem very important, and beg leave to recommend an appropriation accordingly. The outer crib on the western pier is undermined, the sand washed away, and the crib itself has slid or settled so as to leave a space of ten feet between it and the remainder of the pier. This will be entirely destroyed, and another and a larger pier-head is absolutely necessary. For this, the item for repairs is included in estimate A No. 8, herewith submitted.

The great Ohio railroad along the south coast of Lake Erie commences in the neighborhood of Conneaut. This road I have elsewhere alluded to. It connects Pennsylvania and Michigan, and must be, during the winter season, almost the only channel of communication through this district of country from east to west. It is already located, and every prospect exists that it will be rapidly carried forward to completion. A survey and location of a railroad from Conneaut to Beaver, Penn., on the Ohio river, has been made. In the rear of this harbor, and directly on the line of the Beaver and Conneaut railroad, are situated some very valuable and extensive coal-beds, now wrought, and rapidly coming into general notice. The coal is very abundant, of the best quality, and highly esteemed. Several of the finest boats on Lake Erie have been built at Conneaut, where the advantages for building are great. The statistical table herewith submitted explains more fully the commercial, agricultural, and manufacturing advantages of the district dependent on this harbor.

12. *Beacon-light at Grand river.*—A very thorough repair of this edifice has been made, as well as of its foundation, which has been secured anew. The planking has been laid anew so far as was necessary, and the light-house itself has been painted and sanded.

Steam dredging machine for Lake Erie.—The contract for this ma-

chine was forwarded to the department last fall. Models and specifications had been previously prepared. During the winter the building was commenced by the contractors, Messrs. Lyon and Howard, of New York, and it has been carried on under my own inspection. It should have been completed the 1st of July, but a succession of disappointments and delays, many of them beyond the control of the contractors, has procrastinated the completion of the work. It will be done within the present month if no new disappointment occurs. The delays alluded to arose from difficulty of exchanges, from delays in obtaining the machinery from New York, from disappointment from the maker of the steam-engine in Detroit, and the same cause in relation to the boilers. Lastly, a general prostration of their mechanics and laborers has crippled the contractors, and they are thrown on the forbearance of the Government. I owe it to them to say, that the hull of the boat and of the dredging-lighters, the different and complicated machinery of wood and iron, the engine and boilers, are all constructed in the best and most serviceable and durable manner. The contractors have, of their own accord, in several instances exceeded, in the quality of their work and the amount of labor applied on the machine, that contemplated by the contract.

Though undoubtedly the Government has sustained damage by their delay, yet the superior performance of the work may fairly be deemed an offset. A drawing of the work, with a report of its performance, will be forwarded so soon as its capacities are fairly put to the test. The entire cost of the machine complete will be $15,500, and of the lighter-scows $6,600. The machine has locomotive power sufficient, it is believed, to move, with its train of scows, from any harbor on the lake to any other, in good weather.

I enclose a report from the contractors.

13. *La Plaisance road, Michigan.*—On this work the entire amount heretofore appropriated has been expended, and the contracts all fulfilled thereon. The labor contracted to be executed on the following portions has been done, viz: 5th, 6th, 7th, 8th, 10th, 11th, 12th, 13th, 14th, 15th, 16th, 29th, 41st, and 42d miles. But the department has already been made aware that the sums appropriated have been entirely insufficient to complete this road on the plan originally designed by the Engineer department. Such parts of the work as have been executed agreeably to that plan, offer now a fine and useful causeway; but the other parts of the road having had but little labor applied on them, were never serviceable, and now have become almost impassable in places. The estimate marked A No. 9 is submitted; the first class of items in which is for the amount required to complete this very important road as originally designed and as commenced: the second class of items is for the payment of the liabilities of the Government absolutely now due, under the decision of the Secretary of War, to refund to contractors the forfeited amounts of 5 *per centum per month*, respectively, for delays beyond the time specified for the completion of their contracts. The appropriations on this estimate are respectfully recommended.

Accompanying this report are enclosed, besides the estimates and drawings already mentioned, the tabular statements (of the local agents respectively) of appropriations, expenditures, &c., up to the 30th September, 1837, as well as certain other tables by them forwarded. By this mail is forwarded, also, a map of Lake Erie, with the towns and

harbors protracted on an exaggerated scale, with a view to reference for the plan of each work; the relative length of piers, the relative size of towns, and the distances from harbor to harbor. It also exhibits the *courses* and *directions* of the different works from the shore.

All which is respectfully submitted, by, sir,

With perfect respect,

Your obedient servant,

HENRY SMITH,
Gen. Sup., &c. Public Works, L. Erie.

Brig. Gen. GRATIOT,
U. S. Army, Chief Engineer, Washington, D. C.

A No. 1.

Estimate for 1838, *of funds required to complete the river Raisin harbor.*

1st. Excavation.			
Canal. 29,704 cubic yards, at 20 cents per yard, (by contract) - - - -	$5,940 80		
River, and between piers - - -	10,800 00		
			16,740 80
2d. Piers.			
For 630 feet additional pier-work on outer harbor to 12 feet water: 21 cribs, for each crib 30 feet long, 15 wide, and 14 feet high, hewn timber 1,260 feet, placed - - -	88 00		
Tie pieces 70 (5 to each course) at 75 cents each, placed - - - - -	53 00		
For piles, 10, at $3 each, driven - -	30 00		
For brush - - - - -	5 00		
For cap pieces, 85 feet, at 12 cents per foot, placed - - - - -	10 20		
For stone, 39 cords, at $6 per cord, deposited -	234 00		
For workmanship, not included above, and contingencies - - - - -	130 00		
21 cribs, at each	$550 20	11,554 20	
Superintendent, 12 months, at $75 per month -	900 00		
Contingencies, repairs, &c. - - -	1,500 00		
Commission on disbursements - - -	767 37½		
		3,167 37½	
		$31,462 37½	

MONROE, MICHIGAN, *September* 29, 1837.

N. D. CURTIS, *Superintendent.*

Approved, and respectfully submitted.

H. SMITH, *General Superintendent.*

MONROE, MICHIGAN, *October* 12, 1837.

A No. 2.

Estimate of funds required for the Huron harbor, Ohio, for continuing the improvements during the year 1838.

Nature of workmanship, contingencies, &c., embracing the intended application of funds required for the year 1838.	Amount.
Twelve hundred piles, average length 20 feet, to drive 12 feet outside the west pier, to form a breakwater, at $1 25 each	$1,500 00
Eight hundred cords stone, to fill in between said piles and the present pier, to form an inclined plane, at $6 a cord -	4,800 00
For a new pile boat, to be built out of the remains of the old one - - - - - - -	1,200 00
For dredging - - - - - -	475 00
For laborers and mechanics, including contingent expenses, superintendence, &c. - - - - -	2,200 00
	10.175 00

JOHN B. WILBOR,
Superintendent Public Works, Huron, Ohio.

HURON, O., *Sept.* 30, 1837.

Approved, and respectfully submitted.

H. SMITH,
General Superintendent.

MONROE, MICH., *Sept.* 30, 1837.

A No. 3.

Estimate of funds required for continuing the improvement at Black river, Ohio, in the year 1838, *constructing a permanent work on the foundation of the present piers, and also for the purpose of working the steam dredging machine in removing the gravel-bar in the harbor, as follows:*

For 500 piles, 20 feet long, at $1 each - - -	$500 00
For 500 piles, 25 feet long, at $1 25 each - - -	625 00
For 500 piles, 30 feet long, at $1 50 each - - -	750 00
For 1,800 cords stone, at $5 each - - - -	9,000 00
For contingencies, compensation to superintendent, &c. -	1,000 00
For driving 1,500 piles, at $1 each - - - -	1,500 00
	13,375 00
For expenses of the steam dredging machine, in removing the gravel-bar - - - - - -	500 00
	13,875 00

The above estimate for dredging is made for the purpose of removing a deposite of earth which extends into the harbor near the south end of the piers, and obstructs the passage of large vessels.

Respectfully submitted.

H. SMITH, *General Superintendent, &c.*

A No. 4.

Estimate of funds required for securing and rebuilding the public works constructing at Cleaveland harbor, in the State of Ohio, in a permanent and durable manner, with stone and masonry, for the year 1838.

Nature of the workmanship, materials, and contingencies embraced in the intended application of the funds requird for the works, not including the present appropriations.	Extent.	Cost.
Perches stone, blocks, at $3 50 - - -	3,500	$12,250 00
Perches stone, rough, at 80 cts. - - -	30,000	24,000 00
Water lime, at $1 a bushel - - - -	1,200	1,200 00
Quick lime, at 30 cts. a bushel - - -	1,200	360 00
Cast-iron dowels - - - - -	2,600	650 00
Wrought-iron clamps - - - -	1,600	1,000 00
Piles, at $2 - - - - -	400	800 00
Stone snubbing posts - - - -	12	96 00
Mechanics and laborers - - - -	–	6,000 00
Superintending - - - - -	–	1,500 00
Contingencies - - - - -	–	4,000 00
		51,856 00

CLEAVELAND, *Oct.* 1, 1837.

A. W. WALWORTH, *Agent, &c.*

Approved, and respectfully submitted.

H. SMITH,
General Superintendent, &c.

A No. 5.

Estimate of funds required for the service of the public works mouth of Grand river, Ohio, during the year 1838.

1st. For completing the repairs on that part of the west pier which was destroyed in the fall of 1835, and building three additional cribs, will be required—

50 oak piles, 32 feet long, 1,600 feet, at 10 cents per foot, - - - - -	$160 00
350 feet of 14-inch square, for capping piles, at 10 cents per foot, - - - -	35 00
370 sticks for cribs, 30 feet long, 11,100 feet, at 6 cents per foot, - - - -	666 00
315 oak ties, 20 feet long, 6,300 feet, at 5 cents per foot, - - - - -	315 00
110 oak ties, 30 feet long, 3,300 feet, at 5 cents per foot, - - - - -	165 00
4,280 perches of stone, at 7s. per perch, -	3,745 00

10,000 feet of oak plank, at $15 per M. -	150 00	
400 pounds of spike, at 12½ cents, - -	50 00	
Iron for bolts and smith's work, - -	300 00	
Carpentry, labor of men, and their board, -	2,000 00	
Contingencies, brush, forage, &c. - -	150 00	
		7,736 00
2d. For repairing the old work of the east and west piers in places where it is absolutely necessary—		
6,730 feet of oak timber, at 6 cents per foot, -	403 80	
75 oak piles, 25 feet long, at 6 cents per foot,	112 50	
2,766 perches of stone, at 7s. - - -	2,420 25	
6,500 feet of plank, at $15 per M. - -	97 50	
Carpentry, labor of men, and board, - -	1,250 00	
		4,284 05
3d. For forming the proposed bank of stone against the piers at certain places, on inside, it will require 800 perches of stone, at 7s. -	700 00	700 00
4th. For commencing permanent work agreeably with the directions of Col. Henry Smith, U. S. agent for the public works on Lake Erie—		
900 piles, 19 feet long, 17,100 feet, at 5 cents per foot, - - - - -	855 00	
Labor in driving piles, - - - -	750 00	
18,753 perches of stone - - -	16,409 00	
Forage and other contingencies, - -	250 00	
		18,264 00
For building a stone scow, - - -	400 00	
Repairing and furnishing a new set of rigging for the pile-driver scow, - - -	250 00	
		650 00
For superintendent's commission of 2½ per cent. on disbursing the sum of $31,634 05 -	790 85	790 85
		$32,424 90

This estimate is made and founded upon actual prices that are now paid for materials, &c.; and the quantity required is from actual measurement. All which is respectfully submitted by

Your obedient servant,

J. ADAMS POTTER,
Sup't Public Works G. R. Harbor.

Approved, and respectfully submitted.

H. SMITH,
General Superintendent, &c.

A No. 6.

Estimate of funds required for completing the east pier at Cunningham creek, Ohio, for the year 1838.

For 4,800 feet durable square timber, at 8 cents,	$384 00
For 4,000 feet do. flat do. at 4 cents,	160 00
For 12,000 feet 2½-inch plank, at $14 per M.	168 00
For 800 lbs. spikes, at $12 per cwt.	96 00
For 150 cords of stone, at $4 per cord	600 00
For labor, board of hands, &c.	1,200 00
For smithery,	125 00
For 2 tons iron, at $120 per ton,	240 00
For 1,000 feet round timber, at 3 cents,	30 00
	$3,003 00

For the construction of a breakwater, the following estimate is submitted:

30,720 feet flat timber at 4 cents,	$1,228 80
5,520 feet durable square timber, at 8 cents,	441 60
72 posts, 24 feet long, 16 in. × 16 in. = 1728 ft. at 8 cts.	138 24
38 sills, 48 feet long, 20 in. × 20 in. = 1632 ft. at 8 cts.	130 56
8,500 feet flooring, at 1 cent,	85 00
800 feet braces, at 4 cents,	32 00
1,638 cords of stone, at $4,	6,552 00
11,040 feet 2½-inch plank, at $14 per M.	154 56
2,000 lbs. spikes, at $12 per M.	144 00
2 tons iron, at $120 per ton,	240 00
2 crane scows, (large,) at $300 each,	600 00
Smithery,	300 00
Labor and board of hands,	3,500 00
	$13,546 76

East pier,	$3,003 00
Breakwater,	13,546 76
	$16,549 76

Cunningham Creek, Ohio, *October* 12, 1837.

R. HARPER,
Superintendent.

Approved, and respectfully submitted.

H. SMITH,
General Superintendent, &c.

Monroe, Michigan, *October* 16, 1837.

A, No. 7.

Estimate of funds required for the service of the public work at Ashtabula, Ohio, during the year 1838.

Nature of materials, &c. to which the funds required will be applied.		EXTENT.	COST. Amount.	COST. Aggregate.	Am't required for the year 1838.	REMARKS.
For permanent work.	Timber,	72,540 feet	$5,589 60			
	Stone,	1,410 cords	7,050 00	-	-	For constructing permanent work.
	Iron,	400 lbs.	28 00			
				12,967 60		
	Foreman & carpenters,	1,300 days	1,690 00			
	Common laborers,	2,600 do.	1,404 00			
	Smith work,	-	188 00			
	Superintendent,	260 days	520 00			
				3,802 00		
	Boarding	521 weeks	1,042 00			
	Crane-scow,	-	200 00			
	Boat,	-	50 00			
	Team work,	20 days	50 00			
				1,342 00		
Removing portion of old work,		-	250 00	250 00	-	100 ft. W. pier—inside at angle.
Blasting and excavating rock to complete,		-	8,630 00	8,630 00	-	Sufficient to complete this work.

Forage, - - -	-	375 00			} Connected with the above operations.
Rigging, - - -	-	100 00			
Contingencies, - -	-	530 00			
			1,005 00		
				27,996 60	
Deduct am't on hand, available for the 4th quarter of 1837,	-	-	-	3,971 44	
				$24,025 16	Amount required.

ASHTABULA, OHIO, *October*, 1837.

MATTHEW HUBBARD, *Superintendent*

A No. 8.

Estimate of funds required for the operations at Conneaut creek, Ohio, for the year 1838, *exhibiting in detail the nature, extent, and probable cost of the several objects contemplated in the expenditure.*

Nature, workmanship, materials, and contingencies, embraced in the intended application of the funds estimated for the second quarter.	Extent.	Cost.	General designation of the parts of the construction to which it is proposed to apply the objects contemplated by the exp'diture anticipated
	Cubic yds.	Dolls. Cts.	
For dredging the earth under water, and delivering the same on lighter scows, at 20 cents per cubic yard, - - -	7,000	1,400 00	Dredging basin.
Six laborers to attend lighter scow, -	-	250 00	
Subsistence, - - - -	-	150 00	
Contingencies, - - - - -	-	50 00	
Compensation for disbursing, - -	-	50 00	
		1,900 00	
The same for the third quarter, - -	-	1,900 00	
The same for the fourth quarter, -	-	1,900 00	
		5,700 00	

A No. 8—Continued.

Repairs for pier-head on the west line of the works, to protect the outer cribs from the action of the water, and for filling up a breach already formed by the settling of the cribs.

	FIRST QUARTER.		SECOND QUARTER.		General designation of the parts of the construction to which it is proposed to apply the objects contemplated by the expenditure anticipated.
	Extent.	Cost.	Extent.	Cost.	
Chief carpenter, - -	1	$60 00	1	$60 00	Framing and sinking cribs.
Laborers, - - -	8	120 00	8	120 00	Do. do.
Smithery, - - -	-	20 00	-	20 00	Repairing tools.
Stone, - - - -	120 cords	540 00	120 cords	540 00	Sinking cribs.
Stone, - - - -	40 do	180 00	40 do	180 00	Repairing breach.
Logs, - - - -	80	80 00	80	80 00	For building pier-head and repairing breach.
Logs, - - - -	40	20 00	40	20 00	
Ties, - - - -	80	20 00	80	20 00	
Square timber, - -	600 feet	50 00	600 feet	50 00	
Plank, - - - -	1,000 do	10 00	1,000 do	10 00	
Subsistence, - - -	-	100 00	-	100 00	
Contingencies, - - -	-	100 00	-	100 00	
Compensation for disbursing, -	-	32 00	-	32 00	
		$1,332 00		$1,332 00	

A No. 8—Continued.

REMARKS.

The object to be accomplished by the appropriation asked for at this time (except for repairing the works) is, to carry out the plan of operations of last season, by excavating a place in the channel of the Conneaut creek for steamboats to wind, and at the same time to afford a more safe and commodious harbor for sail vessels seeking shelter in storms.

A sketch of the harbor and river, showing the proposed excavation, is herewith forwarded. The amount excavated this season, up to the 30th September, 1837, is estimated at fifteen thousand cubic yards, and the funds on hand will complete 2,000 cubic yards more up to the end of the 4th quarter. The appropriation now asked for is believed to be sufficient to complete the basin.

For repairs.—This appropriation asked for is to secure the outer crib of the west line of the works, and to repair the breach made by the settling of the outer end of the crib, which has caused a separation of the crib from its fellow, of about ten feet wide. To effect the object, it is proposed to sink a new crib or pier-head of larger dimensions than common cribs, strongly built, and well filled with stone, with a sufficient quantity of stone deposited on the outside of it, to protect and support the bottom thereof. A pier-head of this description, it is thought, would be sufficiently strong to resist the force and action of the water, even when dashed against it with all the violence of a northeast storm.

A. DART, *Agent.*

Approved, and respectfully submitted.

H. SMITH,
General Superintendent.

MONROE, MICHIGAN, *September* 30, 1837.

A No. 9.

Estimate of funds required to complete the road leading from La Plaisance bay, Michigan, westwardly, to intersect the Detroit and Chicago road, agreeably to the plan of the Engineer department of the 1st of March, A. D. 1833.

No.	How to be applied.	Amount.	Total.
1	For the purpose of completing the whole road, to the width of 60 feet, on the plan of 1st March, A. D. 1833, 37 miles, at $500 per mile - - -	$18,500 00	
	For commission on disbursements, &c. 2½ per cent.	462 50	
	For pay of inspector, &c., 6 months, at $75 per month - - - - - - -	450 00	
			$19,41250
2	For the purpose of refunding to William H. Montgomery, for completing a portion of impassable road on said La Plaisance road - - - - -	100 00	
	For the purpose of refunding to contractors the amount of 5 per cent. per month, heretofore retained, agreeably to the plan and decision of the War Department - - - - - -	1,580 00	
	For commission on disbursing the above, 2½ per cent.	42 00	
	For compensation of superintendent for one month paying the foregoing - - - -	75 00	
	For amount of contingencies, &c. - - -	1,940 50	
			3,737 50
	Amount required to complete work, &c. - -		$23,150 00

JOHN J. WENDELL, *Superintendent.*

Approved, and respectfully submitted.

H. SMITH, *General Superintendent, etc.*

B.

DUNKIRK, N. Y., *September* 30, 1837.

SIR: I have the honor to submit the following report in relation to the United States works of improvement on the south shore of Lake Erie, under my general superintendence, for the year ending on the 30th of September, 1837:

Erie or Presque Isle harbor.—The works commenced in August, 1836, for securing the breach through the neck of the peninsula enclosing Presque Isle bay, and for forming at that point a navigable channel, have progressed as rapidly as the limited means afforded by the appropriation applicable to that object would allow. The pier which is to close up the breach has been extended 1,740 feet, and for the purpose of giving additional stability, 9 counterforts or lateral spurs have been added, equal in all to a length of 180 feet, making together 1,920 running feet, inclusive of the 600 feet built previous to the 30th of September last; the main line of pier-work at the head of Presque

Isle bay is now 2,340 feet long. This is about one-third of the whole length which will be required in addition to the channel-piers.

At the old works at the east end of the bay, $420 32 has been expended in rebuilding 180 feet of pier at the south end of the south breakwater, where it joins the main shore. This was rendered necessary by the decay of the old wood-work, in consequence of which a channel had begun to be formed across the sand beach around the extremity of the work. Including this 180 feet, the total number of running feet of pier-work built during the year is 2,100.

The work-shops and boarding-houses at the new works at the west end of the bay have been much extended and enlarged, at an expense of 1,000 dollars, and are now quite ample for any probable contingency that will arise during the future prosecution of the work.

The amount of funds available for the year, including the appropriation of $15,000, was $20,966 46.

The amount which has been expended is $20,259 64, distributed as follows, viz: for carrying on the new works at the west end of the bay, $16,650 01; for rebuilding 180 feet of old work, at the east end of the bay, $420 32; charged to the appropriation for pier, as the proportional part of the cost of the steam dredge and scows building at Monroe, Michigan, for the United States works on the south shore of Lake Erie, $2,189 31; and for building additional quarters, workshops, and stables, at the new works, $1,000. The amount remaining unexpended on the 30th September, was $706 82, subject to several charges for work done and materials delivered. The funds being exhausted, the works will be immediately brought to a close for the year.

The whole amount of expenditures by the United States, in connexion with the improvement of this harbor, to the 30th September, 1837, has been $112,151 61, as follows, viz: for the works at the east end of the bay, $84,210 24; charged on account of the steam dredge for Lake Erie, $2,189 31; for houses, work-shops, and stables at the west end of the bay, $1,600; for machinery and materials remaining on hand and available on the 30th September, 1837, $1,802 50; leaving for the construction of a pier 2,340 feet long, at the upper end of the harbor, $22,349 56.

The success which, so far, has attended the prosecution of the work at the head of Presque Isle bay has been entirely satisfactory, and every encouragement is given that the plan now in process of execution will be attended with complete success. As fast as the pier has been constructed, the sand has collected against it on the lake side, forming a slope or beach which will protect the work from any danger on account of ice or of storms; and this accumulation has been so rapid, that it has been found expedient to dispense, this season, with the piles which it was originally intended should be driven on both sides of the work to ensure its stability. The object in view is to close up a shallow opening, now a mile and a quarter in width, interrupted by a few small sand islets which have recently been formed through the neck of the peninsula which formerly enclosed the harbor of Erie, and by leaving a channel four or five hundred feet wide, guarded on each side by channel piers extending from deep water in the bay to deep water in the lake, a distance of 1,200 feet, to cause a navigable channel to be made by the force of the inward and outward currents, constantly produced in this narrow opening by the tendency of the bay to adjust itself to the ever-varying level caused by the action of winds upon

the lake; this being precisely the mode in which the excavation of the eastern channel into the bay was effected. It results from this statement of the nature of the operation now in progress, that, in proportion as the pier or dam is extended, and the opening thereby diminished, the water, concentrated into a narrower space, will immediately commence to grow deeper by the increased action of the current over the surface of the shoal, and that great economy would result from rapidly extending the pier over the whole of the shoal except the portion which it is proposed to leave for a channel. The difference in the cost between proceeding slowly and with rapidity will, in the latter stages of the work, be equal to the difference in the expense of constructing the pier in water 2 or 3 feet deep, and building it in water 8 or 10 feet deep. In this instance, therefore, besides the ordinary evils resulting from appropriations incommensurate with the objects in view, the nature of the work itself renders it nearly certain that it will cost twice as much to effect this improvement in six years, as it would to do it in three. Governed by these views, the minimum estimate for next year has been placed at 50,000 dollars, and it is earnestly recommended to the Department that this amount be asked of Congress.

It appears unnecessary to repeat all that has heretofore been said as to the importance of Presque Isle bay, and of this improvement connected with it, in a commercial and military point of view. When the improvements in progress shall have been completed, the Government will have at its disposal for naval purposes a perfectly safe roadstead covering an area of upwards of three hundred acres, with a depth of water of from ten to thirty feet, with entrances at each end having channels sufficiently deep to admit the largest vessels which can navigate the lake; and the immense commerce of the lakes will profit, to an extent difficult to estimate, by the same advantages. This harbor is every day attracting more attention in the State of Pennsylvania; and besides the Pennsylvania canal, which has been located to this point, the stock has recently been subscribed to secure the charter of a great railroad terminating here, and which, connecting with other works, will form a continuous and direct line from Philadelphia to Erie. This railroad will forcibly illustrate the manner in which the enlightened policy pursued by the General Government, with reference to the lake improvements, is felt in its beneficial consequences throughout the whole extent and in the most secluded portions of our country.

Accompanying my report I forward that of the local agent, P. S. V. Hamot, Esq., to which I respectfully refer the department for many interesting details and statistical statements. It appears from Mr. Hamot's report, that from the opening of the navigation at Erie, on the 17th of April, to 30th September, 1837, 547 steamboats cleared from the port of Erie, whose tonnage amounted to 181,791 tons, and the number of passengers on board to 79,349; and that during the same period the number of clearances of ships, brigs, and schooners, was 107, whose tonnage amounted to 7,867 tons.

The statements and estimates required by the regulations of the Engineer department are herewith transmitted. I also transmit a map drawn by myself from a survey which I made for the purpose, showing the condition of the works at the head of the bay on the 30th of September, and also the important changes which have taken place in the shores and shoals in that vicinity since the survey of 1835.

Dunkirk.—The operations for the year have consisted, 1st. In continu-

ing last fall, until the lake was obstructed with ice, the repairs of the breakwater, or east pier, which were in progress at the date of the last annual report. 2d. In repairing and refilling with stone 273 feet of this breakwater, which was carried away in the great gale of December last, in consequence of the decay of the timber. 3d. In adding in ten feet water an extension of 394 feet of crib-work twenty feet wide, to the west end of the breakwater, built with timber to the height of between five and six feet above the level of the lake, and filled with stone. This extension leaves for the western or main entrance into the harbor a width of only 350 feet, which is as narrow as it is desirable to make it. 4th. In adding in seven feet water an extension of 330 feet to the east end of the breakwater. Of this work 210 feet is built with timber to the height of four and a half feet above the lake, and filled with stone, and the remaining part will be finished in the same manner in the course of the fall. 5th. In adding to the east end of the west pier, in fifteen feet water, a crib forty-five feet by fifteen feet, built with timber, and filled with stone to the surface of the water, intended to give additional support to the pier-head of stone-masonry surmounted by a beacon light-house of wood, which have, during the past summer, been erected at this point by the Treasury Department. This beacon was lighted on the 31st of August, and has proved of great advantage to the harbor, the entrance being at all times easy and safe by keeping it and the light-house in range. These additions have increased the length of the breakwater to 2,064 feet, and that of the west pier to 1,935 feet.

Inclusive of the appropriation for 1837 of $15,000, the amount of funds available for the year was $22,869 55. The expenditures have amounted to $21,002 40, leaving in the hands of the agent on the 30th September, 1837, $1,867 15, the whole of which will be expended this fall in completing the eastern extension of the breakwater, and in adding two courses of timber to the height of the old part of this work, to enable it more effectually by that means to protect the anchorage within the bay, but more especially to give such increased stability to the decayed timber-work above water as will, if possible, enable it to resist the violence of the winter storms.

The whole amount expended by the United States for the improvement of the harbor of Dunkirk has been $76,579 28, of which $1,192 20 remains available in materials and machinery on hand, and $2,040 72 has been paid out of the Dunkirk appropriation towards the building of a steam dredge and scows for Lake Erie; leaving $73,346 36, which has been applied to the construction of 3,999 feet of pier-work in water from six to fifteen feet deep.

The additions during the past year have greatly improved this valuable harbor, but much remains to be done to complete the works in the manner proposed.

The anchorage and wharves are now well sheltered against westerly winds of ordinary violence; but when the waters of the lake are raised, as is occasionally the case in storms of the greatest severity, four or five feet above their ordinary level, the highest of the piers is inadequate to afford the requisite protection. The timber-work above water decays rapidly, and this cause has already been productive of great expense and injury. In the last three years the sum of $8,000 has been laid out in repairs, which would have been unnecessary if the material used above water

had been stone. Nothing can show more forcibly than this fact the propriety of proceeding without delay to place on a permanent footing these Government works, which experience has shown to be productive of such immense benefits. On the northeast, the harbor still remains open; danger from that quarter having been much less to be apprehended than from the northwest, particularly as easterly winds, at Dunkirk, lower, instead of raising the water of the lake. The amount of the estimate for carrying on the works in 1838, is the same as was stated in the last annual report by my predecessor, Capt. H. Smith; and it will be seen that the largest portion of that amount is to be applied to commencing the stone-work which, from the surface of the water upwards, is to replace the present perishable structure of wood. Stone of excellent quality may be obtained from quarries within five miles of Dunkirk; but, to enable these quarries to be opened with advantage and economy, a considerable quantity of stone should be contracted for in the first instance.

The importance of the harbor of Dunkirk in a commercial point of view has heretofore been fully set forth. The surface enclosed by the Government works will be about two hundred and eighty acres, of which there are eighty acres of excellent anchorage, with clay bottom; and there is wharf-room sufficient for the transaction of a very large business. It occupies a position nearly midway between Buffalo and Erie. It is extremely valuable as a port of refuge, and has been much resorted to for that purpose by steamboats and sail vessels; and it has been selected for the termination of the New York and Erie railroad through the southern tier of counties of the State of New York; a work the completion of which will at once place it among the chief harbors on the shores of Lake Erie. The number of steamboats and sail vessels touching at this port has during the past season greatly increased. From the opening of the navigation on the 5th of May, to the 30th September, 1837, the number of arrivals of steamboats was 630, whose probable tonnage amounted to 183,177 tons, and the number of passengers to 78,700. During the same period the number of arrivals of schooners and sloops was 103. Shipping to the amount of 778 tons is owned at the port.

The annual report of the local agent, Thomas Foster, Esq., is herewith transmitted, together with the estimates for the year 1838, (marked B No. 1,) and the statements required by the regulations of the department. The report of the agent embraces many important and interesting details which I have omitted. I also transmit a map of Dunkirk harbor, showing the condition of the works on the 30th September, 1837, together with a plan of those needed for its further improvement.

Buffalo.—At this important point there have been no expenditures during the past year. I transmit herewith the report of the local agent, J. S. Smith, Esq., (marked B No. 2,) to which the department is respectfully referred.

The unusual height of the waters of the lake for the past season, and the increased force given thereby to the waves during the violent gales of last fall, have caused considerable injury to the pier at a point which was supposed to have been sufficiently strengthened, and which would, no doubt, have proved so had the lake remained in the situation it was when this part of the work was constructed. A small portion of the outer pavement of the mole, at a point about one-half way from its inner to its outer extremtiy, has been washed out, owing to the small size of the stones which at

this point it was judged safe to use. The outer and still more exposed parts of the work have received no injury, having been paved with stones of a larger size. Parts also of the pavement of the towing-path have settled, and will require to be relaid.

These injuries have not as yet been productive of serious consequences, and are such as are liable to occur to the most permanent works in situations of such extreme exposure as that occupied by the Buffalo mole, until every part shall have been subjected to the test of time and the greatest violence of the elements. It is absolutely necessary, however, that the damage should be repaired without delay, as otherwise a breach will be made through the mole, and thus, in a violent gale, all communication with the light-house at the extremity of the pier might be cut off; a result which, in the present state of the commerce of Lake Erie, almost the whole of which centres at this port, might be attended with the most disastrous consequences.

An estimate is submitted for repairing this injured portion of the outer slope with stones of a larger size than those first used, and also for resetting parts of the pavement of the tow-path. This work cannot with prudence be deferred longer than until the next working season.

Besides the sum necessary for repairs, an appropriation is required to reimburse the superintendent for advances made to bring the works to completion in 1836. These advances were productive of the greatest advantage to the Government, and the superintendent is entitled to much praise for his public spirit in making them. Owing to some misunderstanding, the amount was not appropriated at the last session of Congress, and he has in consequence been subjected to much inconvenience. The estimate of the superintendent, (marked B No. 3,) accompanies this report. I also transmit the requisite statements, and an engraved map of Buffalo, accompanying the local superintendent's report.

There are now fifty steamboats on Lake Erie, whose tonnage amounts to 10,509 tons, and eleven more launched and on the stocks, which will be ready next season, whose tonnage will be about 5,000 tons; and there are two hundred and thirty ships, brigs, schooners, and sloops, amounting to 16,931 tons. The steamboats make their trips once a week, and the sail vessels once in two weeks; so that the coasting trade of the upper lakes next season will amount to 75,904 tons per month. To the residents in this section of country it is well known that the whole of this immense commerce owes its safe existence to the United States harbor improvements.

Black Rock.—Nothing has been done at this place during the past year, and the different works remain in nearly the same situation they were at the time of the last annual report by my predecessor, Capt. H. Smith. The mole on Bird island has not been injured by the storms or ice, and it appears to answer perfectly the purpose for which it was intended.

The traverse-pier received some injury at the breaking up of the ice in the spring, owing to the current produced by an extensive breach made in the State works forming the Black Rock basin. A few of the large paving-stones and a small portion of the embankment were removed.

The State of New York has very thoroughly repaired the damage done to its work, and the injury to the traverse-pier will be repaired this fall. The pier which projects from the main shore for the purpose of arresting the sand in its progressive motion along the beach, and preventing it from

accumulating in the Black Rock basin, has received no injury. The accumulation of sand against the south side of it has, however, been so great that it begins to pass around the outer extremity of the work; and the pier must be extended, or, which would perhaps be more economical, a new one constructed, about three hundred yards to the south of it, as was recommended last year, in order to accomplish the object in view. The cause, however, which produces this motion of the sand, is constant and uniform in its action; and I believe that nothing will effectually remedy the evil short of entirely protecting the shore between Buffalo and Black Rock from the surf of Lake Erie, or confining the sand in its place by a series of parallel piers projecting from the beach at suitable intervals over nearly the whole of the distance included between the present pier and Buffalo creek. The effect of this latter mode would be to cut this beach into small portions, each of which would assume such a direction that the surf caused by the prevailing westerly winds would no longer produce a progressive motion towards the north in the particles of sand of which the beach is composed. In the summer of 1835, in obedience to that part of the general instructions of the Engineer department which enjoined upon me the duty of making careful surveys of the different harbors under my charge, with a view of determining the precise amount of the changes which are constantly taking place, I surveyed, among others, the harbors of Buffalo and Black Rock, and the small portion of Lake Erie included between them, with that object, and made such connexions with fixed points as would enable me at any future period to determine the precise amount of the change which in the interval had taken place. Since that period an evident alteration has been produced in the shape and position of the shore; but having had no funds at my disposal to make another survey, I am without the means of accurate comparison.

On the chart which in 1835 I made and transmitted to the department, I traced a sketch of a work which I thought would be of great utility. The same thing was done on the charts of Dunkirk and Erie, which at the same time were submitted. The work at Buffalo, however, appears not to have found favor with those most interested; and I allude to it only for the purpose of stating, with the sanction of the department, that a discrepancy which apparently exists in document 82, 24th Congress, 1st session, House of Representatives, between the statements made by the department and myself in relation to that survey, has no existence in reality, both statements being correct in the senses in which they were intended.

Not having this year received a report from the local agent, Gen. P. B. Porter, I transmit a copy (marked B No. 4) of the one which he made last season, as being applicable to the present circumstances of the works; and I respectfully recommend that the amount of the estimate therein contained be asked for at the approaching session of Congress.

I am, very respectfully,
Your obedient servant,
T. S. BROWN.
Gen'l Superintendent of the U. S. Works at Erie, Dunkirk, Buffalo, and Black Rock.

Brigadier General C. GRATIOT,
Chief Engineer, Washington City, D. C.

B No. 1.—*(a)*

Estimate of funds required [at Dunkirk harbor] for constructing a permanent stone wall of nine feet high, on the pier at the western entrance into the bay, from the beacon-light, running in-shore.

6,000 cubic yards large quarry stone, at $2 per yard -	$12,000 00
6,000 cubic yards mason-work, at $1 30 per yard - -	7,800 00
3,000 bushels water cement, at 37½ cents per bushel - -	1,125 00
1 ton bar-iron, for clamps, at $200 per ton - -	200 00
12 laborers to carry off stone, lime, sand, working scows, machinery, &c., and perform all the required labor while constructing the work, 2,808 days, at 90 cents per day, boarding included - - - -	2,527 20
Superintendence, 312 days, at $2 50 per day - -	780 00
Add 10 per cent. for contingencies on $23,682 20 - -	2,368 29
Amount required for this object - - -	$26,800 42

THOS. FORSTER, *Superintendent, &c.*

B No. 1.—*(b)*

Estimate of funds required for extending the breakwater [at Dunkirk harbor] eastward six hundred feet.

22 flat side-sticks, each 32 feet, 13 by 15 inches, at $2 50 -	$55 00
46 hard wood cross-ties, 20 feet, 10 inches diam. at 75 cents	34 50
66 feet hewn timber for posts, at 8 cts. per foot - -	5 28
19 cords pier stone, at $8 per cord - - - -	152 00
33 cords pier stone, at $4 per cord - - - -	132 00
12 laborers, 6 days, (72 days,) at $1 per day - -	72 00
Carpentery - - - - - -	61 00
Superintendence and agency - - - -	30 00
Contingencies - - - - - -	75 00
Cost of one crib 30 feet long - - - -	$616 78
Cost of 20 cribs, 30 feet each, at $616 78 is - -	$12,335 60
Add for unforeseen contingencies - - - -	863 98
Amount required for this object - - -	$13,199 58

Total amount required for the service of the year 1838, viz :

Estimate marked *(a)* - - - -	$26,800 42
Estimate marked *(b)* - - - -	13,199 58
Total amount required - -	$50,000 00

Very respectfully submitted by your obedient servant,

THOS. FORSTER, *Superintendent, &c.*

B No. 2.

Report in relation to Buffalo harbor.

SEPTEMBER 30, 1837.

There having been no appropriation last year, and no balance in the Treasury applicable to these works, nothing has been done towards improving them.

The works were constructed with a view to resisting the force of the surf as the level of the lake was several years ago, at which time it was supposed that no wave could reach the summit; but the increased height of the lake (nearly three feet) has of course added that much to the height, and a much greater proportional *force* to the waves; and they have not only reached the top, but have rolled over it in sheets two or three feet deep. The outer part of the mole, paved with large flat stones, has received no injury, although subjected to surf of nearly double the force that was ever anticipated.

The in-shore part of the inclined plane, extending from the eastern angle to the lake, is paved with small flat stones, about one foot in width; it remained entire several years, until the tempest last fall made a break in the paving, and swept out the stones about one-half through the wall; this break, for want of means, has not been repaired. Should the small stones be replaced, it will be constantly liable to damage from the same causes, and cannot be counted upon as permanent. If left as it is, without repairs, the whole work will be exposed to destruction. It is therefore recommended that the whole of that portion of the mole be *repaired* with large stones, like the rest of the work.

The whole area of Buffalo harbor and creek, including the entire surface from the mouth of the creek to the projected south channel, is less than *twenty-eight* acres.

If nothing more effectual be done to enlarge the accommodations for vessels, it will soon be necessary to construct a wall upon the beach or lake side of the peninsula, about one mile in length, at a cost of about forty thousand dollars; some dredging in the creek, cost, perhaps, four thousand dollars; and the wall in front of the Government land must be completed, at a cost of about eight thousand dollars.

I present no plan for those operations, preferring to leave the whole until the city authorities (which heretofore opposed the plans for enlarging the harbor) shall have determined upon some that may be feasible.

Herewith I transmit an estimate of funds wanted for the year 1838.

ISAAC S. SMITH, *Agent, &c.*

B No. 3.

Estimate of funds wanted for Buffalo harbor, for the year 1838.

To pay arrearages, - - - -	$9,897 22	
Contingencies, - - - -	502 78	
To repave the in-shore inclined plane, 8.000 superficial feet of large deep stones, at 60 cents,	4,680 00	$10,400 00
To labor, 16 men, 200 days, each $1, -	3,200 00	
To cranes, tackle, chains, sledges, &c. -	500 00	
To superintendence and contingencies, -	1,220 00	
		9.600 00
		$20,000 00

BUFFALO, *September* 30, 1837.

ISAAC S. SMITH, *Agent.*

B No. 4.

[EXTRACT.]

BLACK ROCK, *October* 31, 1836.

SIR: The following is an estimate of the expense of completing and strengthening the present works of the Black Rock harbor; and for which it is very desirable that an appropriation should be made at the approaching session of Congress.

The upper part of Black Rock harbor is separated from the Erie canal (which leaves the harbor some distance below its mouth, and passes on to Buffalo, in a line nearly parallel to the lake shore) by a naked sand beach, some two or three hundred yards in breadth. The timber and shrubbery which formerly grew on and in the rear of this beach, and which served to arrest and detain the sands in their place, having all been cut off within the last few years, has given greater scope and action to the winds from the lake, which have already driven the sand at the lower part of the beach back in the direction of the canal, to such an extent as to threaten a breach across the sand-bar from the lake to the canal, the effect of which would be to fill the harbor as well as canal with sand.

The object of the work for which an appropriation is now sought, is, to guard against this danger by the construction of a mole, three hundred feet in length, along this part of the sand-beach, to be composed of piles and stone, and of the expense of which the following is the estimate:

300 piles, twelve feet in length, cost - - - -	$300
5,000 feet sheet piling, - - - - - -	60
300 feet of stone wall, four feet high and four feet in breadth; 60 cords of stone, at $4 50 per cord, - - -	270
Pile-driver and hammer, say - - - - -	150
Labor, - - - - - - -	250
Contingencies, - - - - - - -	150
	1,180
Add balance of Colonel Totten's estimate, now required, -	8,000
Total, - -	$9,180

In the summer of the year 1833, Colonel Totten, of the engineer corps, made a survey of the lake harbors under the direction of the War Department, and in his report recommended the construction of certain works in the Black Rock harbor, the expense of which he estimated at $20,000. In accordance with this recommendation, Congress, at the succeeding session, made an appropriation of $12,000, which has been expended in conformity with Colonel Totten's views. The complement of this estimate ($8,000) could now very advantageously be expended.

P. B. PORTER, *Superintendent.*

C.

ROCHESTER, *October* 24, 1837.

SIR: As the amount required for constructing the pier-head of the western pier, with the view of obtaining a good foundation for the beacon-light, bore so great a proportion to the whole sum available for the public works at the mouth of the Genesee river, New York, for the year 1837, it was found to be impracticable, with a proper regard to economy, to commence the masonry this season; and, even had the appropriation been much larger, but little could have been done; for, after my arrival here, which was not before the middle of June, arrangements had to be made for obtaining suitable materials. It was therefore determined, as the best course, to finish the pier-head, and expend the balance remaining in the purchase of stone.

The pier-head is now completed; and the contract entered into for three thousand tons of limestone, from the quarries at Chaumont bay, will, in the course of a few days, be fulfilled.

The west pier extends two thousand six hundred and seventy feet into the lake, and the east two thousand six hundred and thirty-four. They are both twenty feet wide, with the exception of a small part of each, which is but sixteen. They consist of crib-work, each crib being sixteen or twenty feet wide and thirty long. The cribs are formed of side pieces, centre pieces, ties, and flooring; to every two side and one centre stick there are four ties; the ties, which run across the piers, instead of being carried up, the one directly above the other, break alternately backwards and forwards, to secure greater strength in the side timbers, and to afford places upon which a portion of the stone with which they are filled may lodge.

Piles have been driven on the outside of the cribs, but they appear to have been productive of no very good effect; stones, thrown in by their sides, preventing the irregular settling of them much better.

The average height of the piers above the surface of the water is nearly three feet. The width of the harbor at its mouth is four hundred and forty-six feet; and, as the piers are not exactly parallel, it becomes broader as you enter.

To obtain a correct delineation of the bottom of the harbor, sections were made across it, sixty-six feet apart, and soundings taken at the end of every ten feet; horizontal planes were passed at one foot apart, and their intersections with the bottom ascertained: the accompanying drawing will, therefore, give a tolerably accurate idea of the present state of

the harbor. From it, it will be seen that the greatest depth in the channel, between the piers, is twenty-three feet; and the least, twelve feet four inches; and that, at the entrance of the harbor, there is seventeen feet water within the piers, and to a distance of about three miles, the average depth of the river is twenty-eight feet.

As both piers run across what was once an extensive shoal, it was to be feared that a deposition of sand would take place immediately beyond the mouth of the harbor: but, on examination, it is found that there is no appearance whatever of the formation of any shoal there. From the centre of the channel, between the piers, where the water is seventeen feet deep, out to twenty-two feet water, the descent is as gradual and as regular as the natural shore of the lake; the least depth of water beyond the end of the piers is sixteen feet.

The piers have been finished three years; the large shoal over which they run has been entirely removed; and as there is now no evidence of the formation of any bar beyond them, it is reduced to an almost absolute certainty, that any farther prolongation of the works into the lake will never become necessary.

From the position of the piers and the width of the harbor at its mouth, whether the wind be from the northeast, north, or northwest, it can be entered with equal facility. This is undoubtedly a very great advantage, and one of which the navigators of the lake avail themselves; for vessels, when caught in a severe gale, if it be possible to make this harbor, run to it for safety.

For the purpose of contrasting the present state of the harbor with the condition of the mouth of the river previous to the commencement of its improvement, the old line of eight feet water has been laid down on the accompanying drawing. The channel was then crooked, and the depth of water on the bar between eight and nine feet. Besides the want of sufficient water to allow the largest sized vessels to enter, it was only when the wind was in a particular direction that vessels of any size could enter at all. There is now a channel four hundred and forty-six feet and over wide, perfectly straight, with sufficient depth of water for any vessel that navigates the lake.

The whole work, being an extent of pier something over a mile, has from its commencement to the 30th of September last, cost one hundred and seventeen thousand eight hundred and twelve dollars. By means of this expenditure a very superior harbor has been obtained at the mouth of the Genesee river; and though the attempt to form an artificial one was at first but an experiment, it is an experiment which has been attended with perfect success.

It now becomes a matter of great importance to secure permanently the advantages that have been obtained.

When the works were examined by Colonel Totten, of the engineer corps, he recommended, as a means of rendering them permanent, the conversion of the wood-work above low-water mark into masonry: his plan was to build on the sides of the piers strong stone walls, using hydraulic mortar, to fill the intervening space with rubble stone, and to cover the top with flagging stone.

The accompanying drawing will show the manner in which it is contemplated to construct the masonry. The average size of the stones obtained from Chaumont bay is five feet long, two feet four inches broad,

and one foot nine inches high. With stones of this size for the outside, and smaller ones for the interior, the walls will be built.

They will vary in thickness from three to six feet; three where least exposed, six where most. To give the walls a greater bearing on the piers, counterforts, twenty feet apart, two feet deep, and six feet long, will be constructed. They will not only strengthen the walls, but will counteract any tendency they may have to slide: this tendency will arise from the cribs not having in all places settled vertically; the bottom on which they rest being a very fine shifting sand. In some parts the subsidence of the cribs on oneside has been considerably more than on the other; and where this inequality is very great, it will be necessary, before building the masonry, to buttress with additional cribs.

The top course is to be three feet wide, and, as each stone of it will be fastened to its adjacent one with two iron bolts, all the stones of this course will be connected together. To prevent the waves from raising and thus displacing any of them, they will be keyed to the course below. As these two courses will then form, as it were, but one, it will be all but impossible for the upper part of the walls to be disturbed even by the most violent waves.

The most convenient height for the piers, above the surface of the water, is six feet; and as the waters of Lake Ontario are subject to a change of level of about two feet, they will be built seven feet above the lowest low-water mark.

To render it practicable to reach the end of the western pier, even in the most boisterous weather, a parapet wall, three feet high and three feet thick, will be added.

This is indispensably necessary; for the light at the end of this pier is of course much more needed in stormy weather than in fair. The space between the walls will be filled with rubble stone, and the top paved with heavy flagging stone.

The following is a comparative estimate of the funds required for finishing the work, viz:

234,562 cubic feet large sized stone, at 20 cents per foot, -	$46,912 40
113,378 cubic feet inferior sized stone, at 19 cents per foot -	11,337 80
76,557 cubic feet paving stones, at 30 cents per foot -	22,967 10
424,124 superficial feet stone, rough hammered, at 5 cents -	21,206 20
382,939 cubic feet masonry laid, at 5 cents - -	19,146 95
76,557 cubic feet paving stones, at 4 cents - -	3,062 28
12,934 bushels hydraulic lime, at 37½ cents per bushel -	4,850 25
729,119 cubic feet old work removed, at ½ cent per foot -	3,645 59
548,134 cubic feet rubble stone replaced, ½ cent per foot -	2,740 67
9,000 iron bolts in place, at 50 cents per bolt - -	4,500 00
200 feet additional crib-work - - - -	5,000 00
	$145,369 24
Contingencies, - - - - -	14,631 76
	$160.000 00
Required for 1838, - - - - -	$50,000 00
Required for 1839, - - - - -	60,000 00
Required for 1840, - - - - -	50,000 00

It is respectfully requested that the whole amount asked for, for the year 1838, be appropriated; for. though the piers still withstand perfectly well the violence of the waves, the top timbers have in many places become very rotten, and, if the masonry be not carried on rapidly, the expense of repairs will, in time, be considerable.

The quantity of rubble stone now in the piers above low-water mark, is more than sufficient to fill the space between the walls that are to be built; but if they are allowed to be swept away, another item would necessarily have to be added to the estimate.

In compliance with the request of the department, the following facts are subjoined, viz:

Population of Rochester.

Last census	17,160
Increase since 1835	2,764

Commerce.—There are twenty forwarding establishments connected with the business either of Lake Ontario, the Genesee river, or the Erie canal.

Flour trade.

The number of mills	20
The number of runs of stone	94

These mills, when in full operation, can grind 25,000 bushels of grain per day, turn out 5,000 barrels of flour, and require a daily outlay of from thirty-five to forty thousand dollars. During the year 1836, between four and five hundred thousand barrels of flour were shipped from Rochester, either by the lake or the Erie canal. The annual sales of flour are estimated at about $5,000,000.

Manufactories.

There is a cotton and woollen cloth and a carpet manufactory, with a great variety of other kinds, the annual sales from which amount to about	$2,480,000
Dry goods, &c., annual sales	1,900,000
Groceries and provisions	1,300,000
General business of Rochester, estimated at	12,000,000

Revenue.

Canal tolls for 1836	$190,000
Receipt of customs at the port of Rochester in 1836	60,000
Receipt of customs at the port of Rochester in 1835	24,000

Trade with Canada.—The number of bushels of wheat imported in 1836, 200,000. Besides the importation of wheat, there is something done in the lumber business.

Steamboats.—There is one which plies regularly between the port of Rochester and Toronto, and the American boats touch on their way up as well as down the lake.

To facilitate the conveyance of travellers, as well as freight, between the city of Rochester and its port, a railroad was constructed on the east

side of the river, to the head of ship navigation, and is now, and has been for some time, in full operation. A charter was likewise obtained for the construction of another on the west side, to run to the mouth of the river; but this has not yet been commenced. The railroad to Batavia is completed, and it is understood that measures have been taken to carry on with vigor the one that is to be constructed to Auburn.

These two roads form but links of the great chain that will eventually extend from the shores of the Atlantic to Lake Erie.

The Genesee valley canal, intended to connect the Erie canal at this point with the Allegany river, is commenced: it will run through a region proverbial for its fertility, and will open another great avenue to the West.

These different improvements, as well as some other of the facts mentioned, cannot be said to have any very direct bearing on the improvement of the harbor; but when it is considered how much the business of Rochester is to be increased by them, and, at the same time, the mutual effect they must necessarily have on each other, it will not seem irrelevant to have touched upon them. One fact alone will show the increasing importance of the harbor. Previous to the year 1835, the receipts of the custom-house were not sufficient to meet the necessary expenditures: in 1835, about $24,000 were collected, and in 1836, $60,000; and there is every reason to believe that, with an increased business, there will be a corresponding increased revenue.

The above facts have been politely furnished me by Henry O'Reily, Esq., of Rochester.

As nothing has been done this season at the mouth of the *Oak Orchard creek*, towards the construction of the piers, the drawing that was forwarded to the department last year will exhibit the present condition of the work. The sum of money appropriated for this work for the year 1837 being entirely too small to effect any decided improvement in the harbor, it has been expended in procuring timber, building scows, and collecting stone from the lake shore. Of timber, 53,000 feet were received before the 30th of September last, and the whole one hundred thousand contracted for will be delivered by the middle of November. Both the crane-scow and the one for carrying stone are finished, and, though exertions were made to procure a large quantity of stone from the lake shore, the great height of the water prevented it.

The quarries in this vicinity consist of a red sand-stone, which disintegrates almost immediately on exposure to the atmosphere; so that, above the surface of the water, the cribs will have to be filled with stone from the shores of the lake.

With the one hundred thousand feet of timber, twelve hundred and sixty feet of pier can be constructed; and as the timber will be on the spot, and ready for use, the work can be carried on vigorously, as well as economically, next season.

The depth of water on the inside of the bar being over twenty feet, the mouth of the creek is capable of being so improved as to form a very excellent and safe harbor.

The want of a good harbor along this part of the lake is much felt, for vessels in distress have now no place to run to, short of Lewistown or Genesee river.

The following is an estimate of funds required for the year 1838, viz:

1,044 ties, 20 feet long, at 75 cts. per stick - -	$783 00
783 side timbers, 30 feet long, at $1 25 per stick -	978 75
288 pieces, 24 feet long, at $1 - - - -	288 00
3,000 cords rubble stone, at $3 per cord - - -	9,000 00
134,130 feet workmanship, at 5½ cts. per foot - -	7,377 15
33,600 lbs. of iron, worked, at 10 cts. per pound, - -	3,360 00
288 piles driven, at $3 per pile, - - - -	864 00
	22,650 90
Contingencies - - - - - -	2,349 10
	25.000 00

With this sum, both piers can be carried out to eleven feet water, the west being eleven hundred feet long, and the east nine hundred. It is to be hoped that the amount of the estimate will be appropriated; for, besides the necessity of having such a harbor for the safe navigation of the lake, the surrounding country is very fertile, and the situation at the mouth very good for a town, and nothing seems wanting but a good harbor to make it, in a short time, a place of considerable business.

I have the honor to be, sir, very respectfully, your obedient servant.

WILLIAM SMITH,
Second Lieut. Engineers.

Gen. C. GRATIOT,
Chief Engineer, Washington.

D.

Annual report of the progress and condition of the United States works at Big Sodus bay, September 30, 1837.

The entrance of this bay was a half mile in width, and obstructed by a bar of hardpan, gravel, sand, and pebbles; to remove which, and to secure the entrance from obstruction, was the object of the laws of Congress, which authorized the construction of piers from both sides of the bay. These piers have answered every purpose of their construction. But the natural decay of the timber has commenced; and to preserve this harbor, that much of the piers from the water's edge, upwards, should be prevented from further decaying and falling into the channel, by the application of stone masonry; for which object, an estimate is herewith presented for the year 1838.

The Government, in the year 1836, commenced to open and remove the bar between the piers, by the use of dredging machinery, and, to the date of the present report, three-fourths of this work has been accomplished, opening a straight channel of fifteen feet in depth of water, leaving the remainder of the deepening and widening to be completed in the year 1838; for which object an estimate is herewith submitted.

The diagram exhibits the work done and to be done. The opening of channels by dredging has become frequent. But this work at Sodus bay has peculiar features, promising durability. The excavation will not fill

in again, because there are no elements in sufficient motion to re-form a deposite. The bay is an estuary of the lake, and the streams that flow into this bay are so small in comparison with the bulk of the bay, and with the dimensions of the channel, that a velocity from that cause would, at no time, be created equal to the removal of any sand in the bed of the bay; moreover, there is a small current setting alternately from and to both the bay and the lake, in every hour of the day, which will be further noticed.

The beacon-light constructed at the north end of the pier is finished, so far as relates to the building, and lantern and other fixtures. A guarded passage over the pier of 265 yards in length, and a further deposite of stone to secure the foundation pier, are essential, and for which an estimate is submitted.

Since the construction of the piers, an effect has been produced by the motion of the waves and a new current around the head of the pier to the east, which, together with the high water for several years past, have formed an eddy around Point Charles, which has encroached upon the point marked A on the diagram, and which eddy has also extended its effects to the point of sand B, of the isthmus, and caused some variation in its position; to prevent an increase of these effects, it is necessary to deposite a pier at each of those points, and for which an estimate is included. During a storm in August last, aided by the eddy just mentioned, a shallow breach was made in the isthmus of 120 feet in width and 8 deep, which is now filling up by the construction of piers, as marked on the diagram.

To prevent the recurrence to maps and documents, I will state the dimensions of Big Sodus bay. This bay extends to the south five miles from its entrance into Lake Ontario, and two and a half miles in width, which forms a sheet of water of twelve square miles, affording an anchorage to any number of vessels of the increasing navigation of the lake, in water of from 12 to 40 feet in depth. This bay is surrounded by a fertile country, and a rapidly increasing population, and is now connecting with Lakes Cayuga and Seneca, and the river Susquehanna, by a canal and railroad, and with an extensive water-power from the lakes into the bay, and will at an early day become an important point of commerce and intercommunication between the Western States, Canada, and Chesapeake bay, and the Atlantic harbors.

Further remarks upon the hourly currents between the piers.—These currents run alternately in and out of the bay and lake once in every hour: the duration and velocity are influenced by the winds. The causes of these currents are not evident. Perhaps they originate by the combined action of wind, tide, and the current occasioned by Niagara falls. Of the wind—it is certain that, in the absence of the other two supposed causes, the wind would occasion a current corresponding to its course, durability, and strength. As, however, these currents exist in calm weather, the wind cannot be the only cause. The natural course of the water down the lake, to its exit in the St. Lawrence, is, perhaps, disturbed by the volume of water, the surplus of the upper lakes, that falls over Niagara, and flows violently into the more quiet mass at Lake Ontario, and may thus produce a motion across the lake, and, by reflex action, cause an undulation that may influence the alternate currents alluded to. Of tide—the theory that pertains to the ocean does, of course, produce its ratio of effect in the lakes; the mass in Ontario is more than six hundred *cubic* miles of

water. The flow of tides would produce a sensible influence upon such a volume; the motion of which, interrupted by contiguous shores, would cause an undulatory action of the whole mass, that might be evident in the currents at Sodus bay. Further observations upon these currents and upon the motion of the waters at the commencement of the St. Lawrence, to determine whether the velocity there be equable, might be useful to decide this question.

Respectfully submitted,

J. G. SWIFT.

D No. 1.

Estimate for funds required in the year 1838, *for the United States works at Big Sodus bay, New York.*

1st.	Dredging the channel, now in operation, 400,000 cubic feet, at 3 cents - - - - -	$12,000 00
2d.	For piers at A and B—	
	30,000 feet, at 7 cents - - - - -	2,100 00
	2,000 pounds iron at 10 cents - - -	200 00
	300 cords stone, at $3 - - - -	900 00
		$15,200 00

J. G. SWIFT.

D No. 2.

Estimate for funds required in the year 1838 *for permanent work at Big Sodus bay, New York.*

1.	To 5,000 tons of stone, from Sackett's Harbor, at $2 50	$12,500 00
2.	For workmanship in laying the same in the water -	5,000 00
		$17,500 00

J. G. SWIFT.

D No. 3.

Estimate for securing and travelling to and from the beacon-light.

1.	For blacksmith's work - - - - -	$250 00
2.	" 265 yards of a guard-walk at $1 - - -	265 00
3.	" 100 cords of stone for foundation, at $3 - -	300 00
		$815 00

E.

OSWEGO, *October* 16, 1837.

SIR: * * * I resumed the charge of the work on the 17th June last; but, to save the trouble of making out returns at that time, I received the funds as they were on the 1st June, and assumed all the payments from that time. Little had been done, except repairing the damages sustained by the works last winter. 1st. The pavement, in consequence of the unfinished state in which it was left, and the want of a sufficient quantity of large stone at the foot of that portion of it which was laid down late in the season, was much disturbed and thrown down, and some of the stone carried off into deep water. 2d. The east pier was stripped of its flooring and stringers for about 150 feet in length, and some 20 or 30 cords of stone washed out; and the east pier-head, from some defect of construction of the part below water, settled down on the inner corner about 2 feet, and was otherwise so much injured as to require taking down and rebuilding the upper part of it.

Since I took charge of the work, the paving of the mole has been prosecuted and nearly finished, and the work of tearing down the wood-work of the old pier, and substituting masonry for it, has been commenced. About 2,803 tons of limestone for paving mole have been received from contractors since my last report, and about 3,495 tons laid in the mole, which, besides repairing the damages above alluded to, has paved about 550 feet in length, or about 19,250 square feet of pavement. There remained on the 30th September about 110 feet in length of mole unpaved; the materials for finishing it are on hand, and the greater part of it will be finished this fall. There have also been received from contractors about 520 tons of limestone for masonry wall, and about 498 tons of limestone for coping and flagging the top of the pier.

The work of substituting masonry has been commenced at the west end of the west pier. That portion from the shore to the angle, comprising about 230 feet in length, has been removed to a depth of from 3 to 4 feet below the present level of the water, and dry masonry of heavy stones commenced on the timber-work and carried up to the surface, where the masonry in hydraulic lime mortar commences. The exterior wall is composed of heavy limestone, neatly scabbled and laid in courses, and rises 14 feet above the water. The interior wall, against which the vessels lie, is composed of the same materials, and rises 6 feet above the water. The inner wall of the parapet rises 8 feet above the inner portion of the pier, and is composed of common stone from the quarries at this place, neatly hammered and laid in courses. The top is covered with heavy limestone flags, 8 or 10 inches thick, with heavy coping stones, 1 foot thick around the edges. I refer you to the plan and profile forwarded with my last annual report. It will form a very beautiful and permanent work.

The plan of the work forwarded with my last annual report contemplated raising the parapet wall 16 feet above the water, and laying the walls of undressed stone. It is now believed that 14 feet is sufficiently high, and that for a wall washed continually by a heavy sea it is necessary to have closer joints than can be made with rough stone, and that, unless the stone be reduced to uniform thicknesses, so as to be laid in courses, the bond cannot be made sufficiently strong. I have, therefore, introduced

the alterations suggested by these considerations into the plan of the work and into the estimate, and submit it for your approval.

On the 30th September, 1,200 perches of masonry had been laid, and 2,500 feet of stone cut. The portion of the wall which is exposed to the action of the waves, about 80 or 100 feet from the angle, will be finished this fall; the rest will be left in an unfinished state for want of funds.

The whole operation, since my last report, involves an expenditure of $28,681 02; $22,033 07 of which has been expended since I resumed charge of the work, and for which I now forward vouchers.

The same difficulty has been experienced this year as last, in consequence of the high water in the lake. This has been more felt in commencing the foundations of the walls than in any other part of the work. It has also prevented me from getting out from the quarries the quantity of large stone required for securing the foot of the pavement. Enough, however, has been got out and deposited to ensure the paving against any immediate or very serious displacement, but a considerable quantity will be yet required to ensure permanency.

The estimate for finishing the work is made with such alterations and amendments of the estimate last furnished as my experience this season in the cost of masonry has suggested. In my last I had estimated too low for the masonry, the labor, lime, sand, and the stone-cutting.

The light-house—The new light-house is completed, and was lighted on the 15th of July last. The foundation has proved to be a good one; no signs of settling have appeared. The appropriation is entirely expended.

I am, sir, very respectfully,
Your obedient servant,
R. C. SMEAD,
Lieut. and Agent for Eng. Dept.

Gen. C. GRATIOT,
Chief Engineer, Washington City.

E No. 1.

Estimate of funds required for the operations at Oswego, N. Y., during the year 1838, *exhibiting the nature, extent, cost, and probable application, within the time above specified, of the several objects of contemplated expenditure.*

Nature of workmanship, materials, and contingencies, embraced in the intended application of the funds estimated for the year 1838.	Extent.	Cost.
Small stone for raising outside of pier, at $2 50 per cord	275 cords	$687 50
Large limestone for masonry wall, forming exterior perpendicular face of the work towards sea and channel, at $2 per ton	2,650 tons	5,300 00
Large limestone for interior wall towards harbor, at $2 per ton	2,000 do	4,000 00
Large stone for inner masonry wall of parapet, at $5 per cord	250 cords	1,250 00
Large limestone flags, eight inches thick, for flagging and coping top of pier, at $2 50 per ton	926 tons	2,315 00
Large stone posts for fastening vessels to, at $25 each	7	175 00
One-inch copper bolting for dowels to coping, at $1 25 per foot	400 feet	500 00
One by three-quarter-inch bar iron for cramps to coping, at 13 cents per foot	2,250 do	292 50
Lead for securing cramps, at $8 per one hundred pounds	2,500 lbs.	200 00
Water lime, at $1 50 per barrel	1,025 bbls.	1,537 50
Common lime, at twenty-five cents per bushel	1,750 bush.	437 50
Sand, at three cents per bushel	17,702 do	531 06
Dressing coping stone at $1 per foot, (running measure)	2,262 feet	2,262 00
Cutting limestone for exterior faces of the work, at thirty-seven cents per foot	13,434 do	4,970 58
Masonry for laying walls, at seventy-five cents per perch, including tenders	6,328 perch	4,746 00
Labor of men for completing the paving of the mole, removing the timber-work of old pier, working cranes, unloading vessels, flagging top, &c. at $1 per day	12,000 days	12,000 00
Horses for working cranes, at $80 each	2	160 00
Forage for two horses	-	150 00
Per diem allowance of agent, at $1 per day	-	365 00
Contingencies, ten per cent. on $41,879 64	-	4,187 96
		$46,067 60

R. C. SMEAD, *Lieut. and Agent for Eng'r Dep't.*

F.

ENGINEER OFFICE, HUDSON RIVER IMPROV'T,
Troy, N. Y., October 28, 1837.

Brig. Gen. CHAS. GRATIOT, *Chief Engineer:*

SIR: In compliance with the requisitions of the circular of the department of the 15th of August last, I have the honor to present a report of the progress made in the improvement of the navigation of the Hudson river, during the year ending on the 30th of September, 1837; together with a project for the prosecution of the improvement during the year 1838.

Progress of the work.—On the upper section the operations have been very limited; being confined solely to dredging such portions of the channel between the sloop lock and the city of Troy as were necessary to afford temporary relief to the few vessels navigating this part of the river. Two thousand four hundred and twenty cubic yards of coarse gravel and paving-stones were removed during the months of October and November, 1836, by the employment of one of the United States dredging machines. Operations were brought to a close, on this section, on the 5th of the latter month, and not resumed again until the 18th of September of this year, when it became necessary to remove a portion of the obstructions swept into the channel, in consequence of a very considerable breach made in the State dam after the breaking up of the ice in the spring. Operations were again brought to a close on the 28th of September, being a working period of ten days; during which time, 2,471.70 cubic yards of the same coarse material were removed; making the whole quantity dredged from this portion of the river 7,303.70 cubic yards. The estimate of last year contemplated the construction of the low dike, running from the foot of the sloop lock to the head of Hay island, in order to preserve the channel unimpaired by excluding the introduction of any foreign matter that might be brought over the dam. The limited amount, however, of the appropriation for the year, compared with the estimate, compelled a suspension of this work to another season; it being necessary to apply the means afforded to such portions of the work on the two other sections as seemed best adapted to advance the general interests of the navigation. The failure of the State dam, and consequent influx of coarse gravel into the channel, would seem to indicate more clearly the importance of this dike; the channel not being liable to encroachment from any other source, except the deposite which may be introduced through the tail-races of two or three manufactories situated below the lock, and deriving their supply of water from the level above.

On the middle section operations were continued last year until the close of the month of November, when the rapid formation of ice in the river compelled a suspension of the work. Seven hundred and forty-five feet of the dike at Port Schuyler were completed during the months of October and November, together with the bulkheads forming the opening for the passage of vessels to the dock at that place. The quantity of sand and gravel removed from Washington bar, during the same period, and placed in the dike, was 18,653 cubic yards. Two steam-dredges were employed, one belonging to the Government, and the other to the city of Troy; from the authorities of which it was hired for the purpose. Operations were resumed on this section as soon as the spring freshet had suffi-

ciently subsided to admit of the prosecution of the work. One of the United States' steam-dredges commenced excavating on Van Buren's bar on the 9th of June, and another on Washington bar on the 24th of the same month; the former, however, was removed to the lower section on the 17th of August, where she now remains; and the latter was employed on the upper section for the short period required for her services above Troy, when she was returned to her berth below. The whole quantity dredged and formed into the dike the present season, ending on the 30th of September, was 56,344.07 cubic yards, making the total quantity dredged from the two bars up to the same period, 91,336.07 cubic yards: all of which, with the exception of 6,208 cubic yards excavated by the Troy city dredge in the fall of the year 1835 from Washington bar, was placed in the dike. On the 30th ultimo this latter work had been carried down to the head of Breaker's island, the grading finished throughout its whole extent, and the revetment nearly laid, requiring but about 1,000 yards of stone for that purpose. At the present date this dike is completed, with the exception of covering a small portion of the revetment with gravel, and securing the foot of the channel slope, for two thousand feet in length, with rubble stone, which it is expected to accomplish early in the coming month. The length of dike completed this season is 3,541 feet, making the whole length of this structure 4,756 feet, and differing from the estimate of the board of engineers 856 feet, which is accounted for, in part, by the extension of the dike above the head of the dock at Port Schuyler—a change noticed in my former report, and the reasons for the same given in a previous communication. The cost of the work, however, when finished, including the opening in the dike for the passage of vessels, which did not enter into the original design, will exceed but little the estimate of the board. This opening, it is feared, will lessen in some degree the usefulness of the work, if, indeed, it does not finally jeopardize its safety. The water in time of a freshet is drawn with great velocity through the opening, thus diverting the downward course of the current at this point, and consequently diminishing its intensity and the uniform abrading action which it was intended to effect. The bulkheads, although well secured, have already given indications that they will require constant supervision during the prevalence of a flood, in order to counteract the evil which this rush of water through the opening is calculated to produce. It is highly probable, therefore, that the results obtained after the action of the next spring freshet will indicate that this opening should be closed, and that the continuity of the line of dike should be unbroken. A further beneficial effect upon the channel might be produced by running a dike from the north bulkhead, tangent to the most projecting point on the west shore: this, in connexion with the proposed wharfing contemplated to be constructed by a company of individuals from the city of Troy to the bend on the east shore, would render the navigation from the lower part of Breaker's island to the city of Troy as perfect as the nature of the river will admit; a depth of water of at least ten feet would thus be obtained at the ordinary low stage, which is abundantly sufficient for the accommodation of all the trade to this place. As a measure of safety, a portion of the most exposed shore of Hart's island, opposite the dike, will be revetted this season. This work is not estimated for by the board, but its necessity is obvious from the exposed situation of the island and the alluvial character of its soil. The dike at Port Schuyler was in too

unfinished a state last year to judge with any degree of accuracy of its effect upon the bars which it is intended to remove. The deposites being heavier and much less homogeneous than those forming the Overslaugh bars, the action of the water may not be sufficiently great to remove the more weighty deposites, which, in that event, would have to be dredged. Of the capability of the dike, however, to keep this portion of the river free from all future deposites, there cannot be the slightest doubt.

On the lower section operations ceased about the same time last year as on the middle section, although a small force was continued until the middle of the month of December in placing the work in a more secure state for the winter. One thousand two hundred and fifty-six feet of the dike connecting Bogart and Beacon islands were completed between the 30th of September, 1836, and the close of operations of that year, leaving 864 feet to finish, nearly midway of the islands—the dike having been carried on from both, in order to facilitate the progress of the work. During the same period, 20.729.84 cubic yards of sand were removed from the Overslaugh bar, and placed in this dike, towards its formation. Two of the Government steam-dredges were employed in this section during the months of October and November, and about the middle of the latter month a third was put in operation, after its removal from the upper section. At the date of my last annual report, it was hoped that, before the closing of the river by ice, the dike on this section would be so far completed as to produce a beneficial result to the navigation at this point. This hope, however, was not realized, in consequence of the unfavorable state of the season. Fully impressed with the importance of closing the dike before the opening of the river in the spring, an application was made to the authorities of the cities of Troy and Albany for the means of progressing with the work during the winter. This having been granted to a limited extent, the work was recommenced on the 3d of January of this year. Recourse was had to a gravel bank on the west shore, near the site of the dike, for a material, which was hauled on the ice in sleds and wagons; by these means the gap was filled to within three or four feet of the top of the dike before the breaking up of the ice in the spring, and the work so well secured, as to resist the united action of the ice and flood, without sustaining any material injury, although the former was of unusual thickness. The beneficial effects of the course pursued were fully developed after the flood had subsided. Where the greatest obstruction existed last year, opposite the northern reach of the old Overslaugh dam, the water has been deepened seven feet; that is, a depth of water has been attained of eleven feet at ordinary low water, where there was only four last season. Below this position, to the head of Beacon island, the terminating point of the dike, the water is not so deep, simply from the fact of its being below the finished portion of the work at the period of the flood; the water, of course, passed freely over the low part of the dike, towards the west shore, before the freshet had attained within three or four feet of the crest of the work. The consequence was, that the velocity of the water below this point was greatly diminished; and the effect of the flood, as was to be expected, but partial in its operation. The depth of water obtained for this portion of the channel is seven feet at the ordinary low stage of water, being an increase of from two to three feet over that of last year. Operations for the season were recommenced on this section the latter part of April, but not effectively until about the same time as on

the middle section. In consequence of the disseverance of what is called Westerloo island from the main, by the freshet of this year, it became necessary to close the breach thus made, in order to cut off the water from the western passage around this island. The dike, for this object, has been completed, and is 365 feet in length. It is constructed upon the same plan with the dike at the Overslaugh; the material for the purpose was dredged within the eastern line of the railroad wharf at Albany, as being the most convenient place for the work, and, of course, without any benefit resulting to the channel. The cost of the dredging, in this instance, will not, therefore, form a separate item, but will properly enter into the cost of the dike; which being a work created by circumstances, its cost does not form part of the estimate of the board of engineers. The dam connecting Westerloo with Bogart island is completed; its length is 421 feet, differing from that estimated by the board 121 feet in length, and nearly proportionally in cost. The manner of construction is similar to that of the dikes; the only variation being in the additional thickness given to the revetment, and an equality of slope on each side of the crest, being three to one of height. A stone apron of considerable width, on the down stream side, protects the foot of the slope from the action of the water when passing over the crest in time of a flood. The same remark applies to this work, in regard to the dredging, as to the dike at the head of Westerloo island—the sand excavated for the formation of the body of the dam having been taken from between the two islands, and entirely remote from the channel. The object of this work is the accumulation of all the water passing by the city of Albany into the east channel, in order to increase the corroding action of the current on the Overslaugh bars. The dike connecting Bogart and Beacon islands is completed, with the exception of covering a portion of the revetment with sand, and the adjustment of the crest to a uniform longitudinal slope, corresponding to the plane of depression of the surface of the flood. The foot of the channel slope will also be protected with stones, as an additional measure of precaution against abrasion. Eight hundred and sixty-four feet of this dike have been finished this year, making the whole length of the dike 4,324 feet, and exceeding the estimate of the board 724 feet, at an additional cost of about $19,000. This latter is accounted for, in part, from the different manner of doing the work; from its being an experimental undertaking; and from the many difficulties encountered in its prosecution, which the experience of the past season has enabled us to overcome in the works commenced subsequently. Some progress has been made this season in the removal of Van Wie's pier and the old Overslaugh dam. The latter work, although not estimated for by the board, is absolutely necessary to the formation of a straight channel conforming with the direction of the dike. The salient angle of this dam not only tends to deflect the current towards the opposite shore, thereby creating irregularities in the bed of the river, but, from its proximity to the centre of the channel, must be regarded as a great nuisance to the river navigation. A buoy has been placed opposite the eastern point of the dam, to guard vessels against running upon it. Machinery has been recently constructed for the purpose of removing these old works; which it is intended to do as far as practicable, by dredging. The cost of raising these dams will no doubt greatly exceed the estimate of the board, being solid masses of timber and stones; the former of which material, at the Overslaugh dam, is strongly connected

together with iron bolts. A portion of the shore of Beacon island has been filled in with sand, in order to correct the irregularities of its outline, and thus avoid the eddies which the reaction of the water in its curves would have produced. A further improvement, however, will be required next year. In the latter part of June, the dike running from the lower part of this island towards the west shore was commenced; its direction being nearly parallel with the general course of the opposite or eastern shore. The object of this dike is the removal of the lower Overslaugh bar, and the attainment of a comparatively straight channel to Van Wie's point; 1,700 feet of this dike were graded on the 30th ultimo, and the revetment for the most part completed. It is contemplated, should the weather permit, to finish from 500 to 700 feet more this season; which, with a range of piling and brushing, that has been carried down on the line of the dike for about 1,500 feet, it is expected will give such direction and force to the current as to open a straight channel into the deep water below Van Wie's pier. Two of the Government steam-dredges have been employed on this section since the recommencement of the work in the summer; and a third was added from the middle section on the 17th of August. The quantity of sand excavated by the machines, during the season, to include the 30th September, and placed in the several works under construction on this section, was 91,307.98 cubic yards; of which 79,040.83 cubic yards were removed from the Overslaugh bars, and 12,267.15 cubic yards from two other points on the river not immediately benefiting the navigation; making the whole quantity of sand dredged and placed in dikes and dam on this section, to include the 30th ultimo, 176,123.82 cubic yards; of which 163,856.67 cubic yards were taken from the Overslaugh.

The principal embarrassment experienced the present season by vessels navigating the Hudson is attributable to several causes, some of which are not generally understood. For many years after the construction of the old works, which now embarrass the navigation of the river, the channel, after passing the Overslaugh dam, diverged towards the east shore, running close to the bank of the river on that side; the shore being so bold as to admit steamboats and other vessels to lie close alongside the bank. At the same time an extensive flat existed between this channel and Beacon island. After taking a circuitous course, the channel finally passed near the tail of Van Wie's pier, which runs from the east shore, and thus gained the deep water of what was called the west channel. In course of time, the eastern shore was so much worn, probably by the united action of the swell created by steamboats, and the abrading force of the flood, as to partially fill up the channel. A new outlet was then dredged near to Beacon island, taking the shortest course into deep water on the west side. This channel is what is termed the "Dug-way." The water having been diverted into the new outlet, and sweeping with considerable velocity around the tail of Beacon island, has reduced the alluvial deposite to its present dimensions, or nearly one-half of its former size. The construction of the dike running from the lower part of this island, necessarily involved the closing up of "the Dug-way" channel; which, from the moment it was crossed, cut off the means of communication with Albany and Troy, by vessels drawing over five or six feet water, except during an unusually high tide brought in by a southerly wind. Vessels seeking an outlet were thus grounded on the extensive flat alluded to; and most of

the masters attempted to work their vessels over the bar at the extremity of the dike, as it progressed, in order to reach the deep water sooner. This not only delayed our work some six weeks or two months, but aggravated the evil in consequence of the eddies produced by so many vessels in proximity to each other.

The waste sand from the dike and dredges was carried and lodged around the bottoms of the grounded vessels, creating greater difficulties at every step of our progress. The embarrassment finally became so great, as to compel the masters of vessels to resort to the old eastern channel; which, although much filled up since its abandonment, afforded considerable relief to vessels of the lighter draught of water, more especially to steamboats. At the request of the authorities of the cities of Troy and Albany, one of the United States steam-dredges was employed about the middle of September in excavating a straight channel parallel with the direction of our dike into the deep water beyond. This has been effected within a few days, and I apprehend but little difficulty will be experienced the remainder of the season at this point. It is proper to remark, that the water has been lower in the Hudson this year, than has been known since the year 1816. This alone would have produced embarrassment to the navigation under ordinary circumstances; much more so, when, by the operation of the dredges, the sand was kept in constant motion, forming an accumulating evil below the work, which the water, at its extreme low stage, was unable to alleviate. As the dike progressed, a depth of from 6½ to 7 feet water was obtained by the action of the downward current alone. A freshet of about five feet is now in the river, which will, without doubt, have a beneficial effect in correcting any little irregularities that may exist in the channel.

The progress of the work during the season has been entirely satisfactory. The labor on all the sections has been performed by the day, and the work executed in a more thorough manner, and, generally, at much less cost to the Government, than last year. The early date at which the appropriation became available, has enabled us to accomplish not only much more than could have been effected had the means been withheld until half the working season had elapsed, but with much greater economy. This has been particularly the case on the middle section, where, by taking advantage of the higher stage of water, after the partial subsidence of the spring freshet, that portion of the dike passing over the shoal was constructed at much less expense than it could have been done for during the low stage of water.

A table, showing the comparative cost of the different descriptions of work on the several sections, for each year since the commencement of the improvement, will be forwarded to the department as soon as it can be prepared.

Project of operations for the year 1838.—On the upper section it is proposed to construct 1,000 feet of the low dike running from the foot of the sloop lock towards Hog island; and to excavate as much sand from the bed of the river as will be sufficient for the formation of the body of the dike.

On the middle section it is contemplated to finish the revetting of Hart's island, and a portion of the east shore above, extending to near the bend. Neither of these works has been estimated for by the board of engineers, but they are necessary for the security of the shore on that side of the river.

It is also proposed to revet Base and Lower Patroon's islands; and, with a view to the removal of "Fish-house shoal," to construct a dike connecting this latter island with Upper Patroon's island. This dike is but partially estimated for by the board: its length will be 6,770 feet, while that proposed by the board is only 2,350 feet, extending about 1,000 feet below the old dam at the Fish-house shoal. The cost of the proposed improvement, however, will not greatly exceed the cost of the dike as estimated by the board, together with that of the dam intended to connect Lower Patroon's island with the west shore: which latter work will be unnecessary, should the dike itself be continued to the island.

To remove the numerous shoals in the vicinity of those islands, it is conceived will require more extensive works than those proposed by the board; a project for which will be submitted at some future day. The annual drawing of this year will, however, illustrate their position and extent.

On the lower section it is proposed to carry down the dike running from the foot of Beacon island to within 450 feet of the west shore, conforming in direction generally with the opposite shore of the river. This would enable vessels, after the removal of Van Wie's pier, and two sunken rocks now incommoding the channel, to run a perfectly straight course from Beacon island to Van Wie's point. This dike will, when completed, be 6,000 feet in length—differing from that proposed by the board 3,100 feet, and exceeding it in cost about $14,000. The removal of 700 feet of Van Wie's pier, a portion of the old Overslaugh dam, and the sunken rocks before alluded to, is estimated for the next year. Only the former work enters into the project of the board; but the removal of the two latter obstructions is indispensable to the perfecting of the navigation from below Bogart island to Van Wie's point. The channel shores of Bogart and Beacon islands it is contemplated to straighten and revet anew.

In order to open a more direct channel from the city of Albany to the Overslaugh, it is proposed to construct a continuous dike, joining on to the main near the railroad depot, and running parallel with the southern line of the same until opposite its eastern extremity; from thence pursuing nearly a straight course to its junction with Bogart island. The construction of this dike will render nugatory the object of the dam between Westerloo and Bogart islands; still it will have had its beneficial effects upon the navigation of the river, by throwing the body of water upon the Overslaugh: it will also greatly facilitate the construction of the dike proposed, by cutting off the cross current towards the west shore. The whole length of this dike will be 6,720 feet, and it will supersede the necessity of the following works estimated for by the board, viz.: a dam of 200 feet in length, connecting Westerloo with Small island; a dike 1,700 feet in length, running from the head of the latter island downwards; and a dike connecting with the head of Bogart island, and running upwards for 1,400 feet. The estimated cost of these works differs but little from the probable cost of the dike intended to be substituted for them.

Two other dikes on the opposite shore, and a modification of the one uniting Bogart and Beacon islands, will be necessary to perfect the improvement of the river between the city of Albany and Van Wie's point. These works, however, are not proposed to be constructed next year, but will be indicated on the annual drawing, in illustration of the general

effect to be produced, which is, the attainment of a comparatively straight and nearly uniform width of channel, and consequent equality in the depth of water—the latter being not less than 10 feet at its ordinary low stage. A vessel leaving Albany, with the wind free, will then be enabled to reach the head of Beacon island without any variation in her course.

To accomplish all the work proposed for next year will require the construction of two additional steam-dredging machines, and twenty-eight lighters; the cost of which is included in the estimate. These were proposed to be built the present year, but the appropriation for the improvement was too limited to admit of any portion of the funds being used for that purpose.

Some legislation seems to be absolutely required, in order to preserve the machinery employed from damage by vessels and rafts coming in contact with the dredges and lighters whilst operating on the river. They are, from their position, necessarily very much exposed, and have already sustained injury to a large amount, without taking into consideration loss of time, and consequent detention to the work. Considerable damage has also resulted to the improvement from the velocity with which the passenger steamboats have been in the practice of passing the works whilst under construction; the great wave, created by their rapid motion through the water, sweeps over the unfinished portion of the dikes, destroying the newly-made slopes, and otherwise injuring the work and machinery. This may be remedied by restricting the speed of steamboats to six miles per hour whilst passing the works under construction, and at such distances before the approach to and departure from them as may be found necessary for their safety. Another great evil, under which the work has labored on the lower section, has arisen from the reckless manner in which many of the masters of vessels navigating the river have forced them upon and around the work and machinery, by which our operations have been greatly impeded, and, in some instances, entirely suspended. The pecuniary loss to the Government from this cause, during the months of August and September, has been considerable, and the progress of the work very much retarded. Some law is required by which those disposed to interrupt the operations, in the manner pointed out, may be restrained, in order that a recurrence of the difficulties experienced the last two seasons may be avoided.

As the present improvement is designed to free the Hudson from existing embarrassments, as well as from future obstruction, it would seem desirable that as little foreign matter should be introduced into the river as possible. With this view, a prohibitory law is called for against the deposite of mud or other substance in any part of the river within reach of the current. I have called the attention of the department to these matters, believing that the interests of the improvement require some prompt action on the subject.

The annual statement of the amounts expended and funds available, to include the year ending on the 30th of September, 1837, together with the general statement of appropriations, &c. of each year up to the same period, as also the estimate of the amount required to complete the project of operations for the year 1838, are herewith transmitted.

The annual drawing of the works completed and under construction, with those proposed to be built next year, will be forwarded to the department as soon as it can be prepared.

All which is very respectfully submitted.

HENRY BREWERTON, *Capt. Corps of Eng.*

F No. 1.

Estimate of funds requisite for the operations of the improvement of the navigation of the Hudson river, New York, during the year 1838, *exhibiting the nature, cost, and application.*

Nature of materials, workmanship, and contingencies.		Extent.	Cost.
FIRST SECTION.			
Dredging, - - -	cubic yards	8,000	$800 00
Dike, - - - -	running feet	1,000	3,920 00
Machinery - - - - -		–	1,672 41
Contingencies - - - - -		–	87 37
For first section - - - -		–	$6,479 78
SECOND SECTION.			
Dredging, - - -	cubic yards	145,390	$5,939 00
Dike, - - - -	running feet	6,770	45,968 30
Protecting islands, - -	running feet	3,800	9,612 30
Machinery - - - - -		–	14,341 44
Contingencies - - - - -		–	749 24
For second section - - - -		–	$76,610 28
THIRD SECTION.			
Dredging, - - -	cubic yards	185,790	$8,128 45
Dike, - - - -	running feet	10,320	54,730 00
Protecting islands, - -	running feet	2,230	3,763 12
Removing old dams, - -	running feet	1,900	20,524 46
Removing sunken rocks - - -		–	2,000 00
Machinery - - - - -		–	28,286 15
Contingencies - - - - -		–	1,477 76
For third section - - - -		–	$118,909 94

RECAPITULATION.

First section - - - - - -	$6,479 78
Second section - - - - - -	76,610 28
Third section - - - - - -	118,909 94
	$202,000 00

ENGINEER OFFICE, HUDSON RIVER IMPROVEMENT,
Troy, New York, October 28, 1837.

Respectfully submitted.

HENRY BREWERTON, *Capt. Engineers.*

G.

Memoir—Improvement of the harbor of New Brunswick.

"For improving the harbor of New Brunswick, by removing the obstructions in the Raritan river, according to a plan reported to the War Department, by Hartman Bache."

GOVERNOR'S ISLAND, NEW YORK.

October 15, 1837.

SIR: The improvement of the harbor of New Brunswick, New Jersey, was commenced in April last, upon the plan reported to the War Department, as referred to in the appropriation above quoted.

The obstructions in the Raritan river, proposed to be removed in the plan reported, consist of a bar just below New Brunswick; rocks, a little above South river, represented in the plan reported to be a continuous ledge across the river; a bar about a mile and a quarter below Crab island, called the Middle-ground; and a bar at the mouth of Red-root creek, called the Stakes.

It was proposed, in the plan reported, to remove the bar obstructions by dredging, and the rocks by blasting.

The principal obstruction is the bar near New Brunswick; it is of greater extent than any of the others, and had less water upon it than any of them before the improvement was begun; the depth in some parts of it having been less than four feet at low water. Dredging has been adopted for its improvement, as proposed in the plan reported. About three-fourths of the work required for this bar has been done; vessels drawing five feet can now pass it at low water; when finished, vessels drawing six feet will be able to pass it. The bar is composed, for the most part, of crumbled fragments of slate of an imperfect formation. The course of the channel, over the bar, is near the bank of the river, which is formed of this slate.

The accumulation of the fragments constantly falling from the bank, has caused the bar to be formed. If a channel made, by dredging, on the opposite side of the river, where the bank is a meadow, could be maintained in other respects, it would be obstructed in but a comparatively limited degree by the accumulation just referred to. But it is believed it could not be maintained, for the reason, that the course of the river is such that the currents would flow with greater velocity in the existing channel; and the effect of this would be, to cause the alluvial matter suspended in the current to be deposited where there was the least velocity. The existing channel is on the outward side of a bend in the river, where, as in all similar cases, the currents naturally flow with the greatest velocity.

The crumbled fragments composing the bar are heavier than sand, and are not liable to be displaced, except by the freshets that occur on the breaking up of the ice, in the spring. These freshets produce generally a slight change in the bar, somewhat beneficial, though not of sufficient extent to be worthy of consideration.

I consider the operation of dredging to be adapted only to situations where there is very little or no current, or where the obstruction to be removed by it, on account of its weight, or its tenacity, is not liable to displacement by currents existing, or that may be produced by artificial

means. The obstruction near New Brunswick may be ranked with the class last stated, and, therefore, dredging is well adapted to its removal.

But dredging will not answer so well for the bars at the Middle-ground and the Stakes; they are formed of alluvial deposites, liable to constant displacement by the ordinary currents, which have greater velocity at them than at the bar near New Brunswick; and their velocity may be much increased by artificial means.

They might be deepened by dredging, but the effect of the ordinary currents, and the waves, would soon fill them up again, unless means should be adopted to contract the width of the channel, and in that way to increase the velocity of the current sufficiently to wear away the lighter particles from the bottom, and to keep them suspended until they should be carried to a point where their being deposited would be attended with no injury to the navigation. In that case, the dredging would be a superfluous expense, as the scraping or scratching the bottom, to facilitate the effect of the currents, would answer every purpose, and would cost a great deal less than dredging.

The width of the river is greatly increased below Crab island, and the sudden expansion is one of the causes of the formation of the bar at the Middle-ground.

By the expansion, the freshet current is suddenly exhausted, and it is ultimately checked by the sea current, somewhere in the vicinity of the Middle-ground. The channel should be contracted so as to carry it beyond that point, and also beyond the Stakes.

The obstruction at the Stakes appears to be produced by the continuance of the ebb tide, in Red-root creek, for a longer period than in the Raritan; in consequence of which, it meets the flood tide of the Raritan at the mouth of the creek, and the meeting produces still water, which causes any sediment in either stream to be deposited. The position and shape of the bar seem to indicate the result that might be naturally expected from the circumstances just described.

The remedy would be to run a pier from the upper side of the mouth of the creek, down the Raritan, far enough to produce and maintain distinctness between its current and that of the creek.

The rock obstruction is not a continuous ledge, as it is represented to be in the plan reported. In the soundings made on two occasions with an iron rod, the rocks encountered were discovered in every instance to be detached; they appeared to be fragments, not very large, and not deeply imbedded, as was inferred from the fact that the rod readily penetrated the sand alongside of them. I think it would be easy to remove them, and perhaps more so than to find them.

The work carried on this season for the removal of the bar near New Brunswick, has been conducted with means furnished by the Delaware and Raritan Canal Company, and under the immediate management of the officers of that company residing at New Brunswick. A very good dredging machine, belonging to the company, was brought from the Delaware river, with two scows, and put upon the work. The machine is worked by a steam engine of about a six-horse power. Men in the employ of the company, who were accustomed to work of the kind, were also furnished by the company, and their services have been charged for at the same rate the company had to pay them. The fuel consumed in working the engine is also charged at the rate paid for it; and to cover the expense of providing oil, hemp, &c., and casual repairs, and the allowance that

should be made for the wear and tear of the vessels and machinery, a daily rate is charged as the equivalent of the value of these several items. The company does not expect or wish to make any profit directly out of the operations carried on, with the means furnished by them, in the manner described. They know the improvements to be made will be chiefly beneficial to them; and, from the time they were commenced, they have done all they could in aid of their prosecution, and the assistance they have afforded has been essentially advantageous.

I am, sir, very respectfully,
Your obedient servant,
JNO. S. SMITH,
Major Brevet Corps of Engineers.

General C. GRATIOT,
Chief Engineer, &c. City of Washington.

H.

LOUISVILLE, KY., *August* 2, 1837.

SIR: My operations in the great raft of Red river were closed on the 25th of May last, excepting the crew of the steam snag-boat "Eradicator," which was transferred to the steamer "Java," to work until the 25th of June; the Java being a much lighter boat, and better calculated to perform a work highly necessary and important to be executed during that period. The Java worked to the date above specified, and arrived at Louisville on the 12th of July. During the last season the raft was removed quite through that part that had been formed previously to the summer freshet of 1836.

On the 25th of May the work was closed. The Java, the headmost boat in the operation, was within four hundred and forty yards of the extreme upper end of the entire formation of the great raft. That part (440 yards) that remained unmoved, was by no means as dense and difficult to remove as the average of the last fifty miles below. The water is now flowing freely through the whole of the river where the raft was located. In the last year about 12¾ miles of it were removed, the distance having been ascertained from the field-notes of Mr. Alexander, United States surveyor. A canal was also excavated across a narrow point of land, through which the whole channel of the river now flows, and shortens the distance three miles. The bayous, that had formerly drained off from the river a very large portion of the water, have all been sufficiently stopped, excepting one, (the Willow chute,) which will take in all the timber that now remains at the head of the raft, and which will sufficiently stop it. The water is now operating with full force on the upper section of the river, where the raft was located, a distance of about 50 miles. From the 25th of May to the 25th of June, the steamer Java removed nearly all the roots and snags that had then risen to the surface of the water, from the Twelve-mile bayou to the Willow chute, a distance of about 30 miles. The work now remaining to be executed to open a navigation through the whole line of the raft, is to remove the 440 yards left undisturbed on the 25th May last, and what may accumulate from that time until the work is again resumed; which time will depend entirely on the action of Congress. The appro-

priation of the last session of $65,000 has all been expended, and exceeded some few dollars. To complete the work will require an appropriation of fifty thousand dollars, viz: to remove the balance of the raft, and to extract from the bed of the river the snags that will rise from its bottom, by being loosened from the mud by the action of the water on the bed of the river, in the upper 50 miles; and to remove the numerous trees that will fall into the river in all that part of it where the raft was formerly located, (160 miles;) and to fell the trees that are liable to cave in with the banks, where the river is now forcing its bed, to the original width of the stream, which is occasioned by the action of a powerful current that is now flowing the whole extent of the former location, and which had been excluded from its natural course for centuries. To enable me to accomplish this important work during the next year, it will be necessary for an appropriation to be made at the called session of Congress in September.

The importance of the work is so well understood by the department, that it is not necessary for me to make any remarks on that subject, notwithstanding I beg leave respectfully to state that this improvement is of the greatest importance to the Government in a military point of view. The Red river leads to, and, by the removal of the remainder of the raft, will open a safe and easy steamboat navigation to the heart of the Indian settlements on the west side of the Mississippi river, as well as to an extensive line of the Texas frontier. The country above the raft is also populating with great rapidity; its settlers are now shut in from market, which will be of easy access if the remainder of the raft can be removed, which requires nothing but the means to carry on the work. I can now make a calculation, that I am willing to stake my reputation on, that the whole obstruction can be removed in three months after the appropriation is made, if done in the ensuing fall; but if it is postponed to the regular session, the appropriation, if then made, would be too late to admit of executing the work during the ensuing winter and spring, and, consequently, must lie over until the fall of 1838. It is impracticable to obtain laborers to execute that work in the summer months. The country where the raft is located affords no labor. The force necessary to remove these obstructions must be taken from the Ohio river. Under all those circumstances, I hope the department will call for and obtain an appropriation sufficient to finish the improvement at the called session in September next. I must be permitted, also, to state further, that, in point of economy, it will be some twenty thousand dollars in favor of an early appropriation, so as to enable me to remove the remainder of the raft during the ensuing winter, instead of allowing the work to lie over one year longer, in which time the quantity of timber to be removed will be much increased by the accumulation on the head of the remaining raft.

I am, sir,

Very respectfully,

Your obedient servant,

HENRY M. SHREVE.

Brigadier General C. GRATIOT,

Chief Engineer, Washington, D. C.

H No. 1.

MEMPHIS, *April* 16, 1837.

SIR: The subjoined report embraces such material facts, relating to the removal of the great raft in Red river, as a careful examination enabled me to collect, and exhibits the present condition of the work, the results produced by what has already been expended upon its improvement, and contains an exact statement of what remains at this time to be accomplished; all of which is respectfully submitted.

That portion of Red river usually denominated the "raft," at the period when the work of improvement commenced, extended from about the mouth of Loggy bayou to a point five miles below the Caddo village—a space of two hundred and fourteen miles.

The precise proportion of this distance occupied by raft it is not possible to ascertain; to estimate it at one-third, it is believed, would be within the true amount.

Any conjecture as to the probable period of its first formation would be uncertain and unimportant; sufficient evidence, however, exists to fix the date anterior to the settlement of the country; and the banks of the river exhibit indubitable proofs that the raft once extended as low as the rapids, within fifty miles of the confluence of Red river and the Mississippi; to which point the back water of the latter stream frequently extends, and there arrests the drift from Red river. Occasionally, even now, when the waters of the Mississippi are higher than those of Red river, rafts of considerable magnitude accumulate at this point. It is not improbable that, at this place, and from this cause, the raft commenced. Once formed, the serpentine course of the stream is such as to secure it against the possibility of removal, except by artificial means, or by the slow process of decay. The annual increment has generally been estimated at two miles. This supposition has not been confirmed by facts. When I visited the raft in 1828, it reached within a very short distance of the Cuschatte chute; it now extends three miles above that point, making the average annual increase less than half a mile. The yearly extension of the raft, near its present head, has been lessened by the immense quantity of drift that is carried into Lake Sheodo, through several large bayous, which in that vicinity have broken from the river into the lake. The upward progress of the raft appears less in the aggregate than it would do, if estimated by the extent of each year's addition. Occasionally, large portions detach themselves from rafts of recent formation, and, in descending, carry with them, by their weight, such smaller ones as are unable to resist their momentum; thus gathering strength as it descends, the mass moves on until it is arrested by a raft too firmly fixed to give way. In this manner, the accumulation of two or three years is sometimes condensed into less space than was at first occupied by the formation of one season.

At the point of impact of the moving and stationary rafts, the logs are subjected to an immense pressure, and consequently assume a very compact form; this, I doubt not, is the origin of what is termed a "sunken raft," the timber of which is confined below the surface of the water, in many places filling the river to the bottom by the pressure thus applied, and not by its specific gravity.

This is msde manifest in its removal, when the extraction of one large

and strong log not unfrequently liberates a score of others before unseen, having been held down by the weight of the timber heaped on them.

The raft region may now be considered under three divisions, viz: that from which the raft is entirely removed, extending one hundred and forty-five miles from the commencement; that in which the raft is cut up and pulled to pieces, but not floated off, thirty-three miles in extent; and that which has not yet been commenced, six miles in extent.

Fully to understand the situation of the obstructed portion of the river, at the time the work was commenced, it will be necessary to premise that each raft acted as a dam, and expelled the water from within the banks in proportion to the solidity of the raft. The water thus forced from the channel, after passing through the extensive lakes which lie parallel to the general course of the river on each side, finds its way back into the bed of Old river, only to be again expelled by the first raft it encounters; and ultimately falls in entirely below the raft through Cross bayou, bayou Pierre, Cuschatte bayou, and numerous other smaller inlets.

The expulsion of the water from the channel caused it to contract, and willow bars have formed on one or the other side of the river, throughout nearly the whole raft region.

The removal of the obstructions from the bed of Old river opened successively, as it progressed upwards, the mouths of these several inlets. The refuse of the raft was, as far as practicable, placed in the outlets; thus augmenting, at each step, the volume of water until it reached Cross bayou, the highest tributary of any importance. To convey off this enlarged stream, a corresponding increase of the channel is required. If this enlargement could be effected by the removal of the willow bars, little additional labor would be required upon that portion of the river from which the raft has been removed; since these bars, being covered with a small growth, their caving in could not seriously injure the navigation.

This, unfortunately, is not the case; the willow bars are generally points; the caving is in the bends directly opposite to these points, where the growth of timber is of the largest dimensions, and forms, when it falls in, a dangerous obstacle. From the mouth of Bayou Pierre, upwards, the banks are giving way under the action of the current: this furnishes a strong evidence of an increase in the quantity of water in Old river, near the foot of the raft. Another, equally conclusive, is drawn from the fact that streams which, before the commencement of the improvement, flowed from Bayou Pierre into Old river, now run in the opposite direction, carrying off a portion of the surplus water from Old river. These outlets will relieve the banks until the channel has become sufficiently large to contain the stream.

The presence of a snag-boat will be necessary in those portions of the river which have been cleared of rafts, as well to remove the large trees which fall in, as to break up the small rafts that are constantly forming from the descending debris of the large one above. These small rafts are easily removed, and are slowly progressing down the stream as they are occasionally detached and set in motion by the passage of a boat. At the commencement of this work, there was little or no current; and, in all cases, that portion of clear river contained between the foot of a raft and the mouth of the inlet next below, was either dead water, or had a current so sluggish as to be unavailing in carrying off the detached masses of raft as they were disengaged by the boats. The loosened logs could conse-

quently be disposed of in no other way than by towing them out of the stagnant water, or by drawing them on shore or into the island chutes. Either alternative was laborious and slow: the latter expedients were adopted generally.

Much of this timber, by a subsequent rise, floated back into the river, and had to be removed the following season; and as it was not cut into short pieces, it is still occasionally found obstructing the navigation and aiding in the formation of small rafts, that will render further labor necessary on that part of the river from which all obstructions have been once removed. Merchant-boats are constantly passing and repassing, and will prevent the formation of large rafts; the trees which fall in with the banks can only be removed by the snag-boats. The next portion of the river is that in which the raft has been entirely loosened, and the logs cut up, but which remains to be removed by the joint influence of the boats and such current as, it is hoped, will soon find its way from the head of the raft.

With a view to secure in the bed of Old river all the water that percolates the raft, the outlets below have been as well stopped as the use of imperfect materials would admit; much water which transpires through the raft is still carried off by Willow chute, and Benoit and Jakes's bayous. Although the river above the raft is high, that part which lies in it has experienced but little change. Cross bayou, which brings the largest volume of the water from the head of the raft, and discharges it into Old river at its foot, backs up the water of Old river to the present foot of the cut-up raft; here it is likely to remain until the fall of the water shall create a current, or the opening of the raft above shall admit a head of water.

Nearly the whole extent of this section of the river is covered with logs and timber cut up short and divested of all roots or limbs, and entirely freed from any thing that might retard its course down; nothing now is wanting but a current to carry it off, and this is daily increasing. The removal of a few yards of solid raft, at the point where the boats are now engaged, caused a fall of eighteen inches in the water above it, and a rise of six below. This is a most flattering indication; and as the remaining parts of the raft, with few exceptions, are of more open formation, a sufficient current to remove the cut-up raft may be created even sooner than is expected. That there must ultimately be a strong current, is evident from the fact that above the raft the banks are now overflowed in places, while immediately below it, in Old river, they are seven feet above water. Following on down Old river to Cross bayou, which brings in the water forced out of the river at the head of the raft, and we find but three and a half feet banks. This height of bank continues for some distance down.

There was a rise of several feet coming down from the raft, which is a favorable circumstance.

There remain but six miles from the point at which the boats are now operating to the head of the raft; of this, nearly one-third is clear river; so that there are in reality but little more than four miles of raft. With the exception of a small portion at the lower extremity, this part of the raft is comparatively loose, and admits of the passage of much water.

The head of water raised by the raft gives a fine current where the boats are now at work, and materially aids the operation by carrying off the refuse as fast as it is extracted from the raft.

From its more recent formation, the timber of this part of the raft is

sounder, and consequently more difficult to cut or saw; but this is overbalanced by its being less compactly jammed together; so that, all things considered, the progress of the work is likely to be greater here than it was lower down the river. Ten and a half miles have already been accomplished since December; it is, therefore, probable the work will be completed this season before the 25th of May, at which period the engagements of the hands expire. In this part of the raft there are several chutes putting out on the west side, carrying off into Lake Sheodo a large portion of the water of the river.

These will be closed as soon as practicable, by which a very considerable accession of water will be had. Cuschatte, the most important of these chutes, was, at the time of my first examination, in 1828, above the head of the raft, which now extends three miles beyond this outlet. The effects of the raft in raising the water are nowhere more apparent than in this region; banks, that are now overflowed, were in 1828 several feet out of the water, which was then about the same stage as at present.

This effect is also manifest in those parts where it has been removed.

Places which in 1828 were overflowed, now that the obstruction which caused the water to rise has been taken away are entirely above high-water mark.

This is particularly observable below Coates's bluff. In addition to the removal of the remaining portion of the raft, there is work to be done near the lower bluff, at the head of Bayou Pierre. The river above this place passes along under the bluff, nearly to its lower extremity, where it deflects somewhat to the north, while the bluff makes about an equal deflection to the south. The river continues its new course for a mile and a half, then makes a short turn and flows back in a direction nearly parallel to its former course, until it strikes and is reflected back from the bluff, at the point where Bayou Pierre leaves the river, assuming a direction again parallel to its first course.

At a distance of about a mile from the bluff, in descending, the channel approaches within forty-two yards of a point on the river a mile above the bluff; this is precisely the place at which it makes the first-mentioned turn. To cut across this neck is a work of small magnitude; the advantages are great. Besides saving two miles in distance, it would be the means of withdrawing a large portion of the water from Bayou Pierre, which, it will be recollected, leaves the river just where it strikes the bluff. It will be the means also of avoiding two very sudden and difficult turns; and, by throwing an increased volume of water into Old river, will facilitate the enlargement of its dimensions, thereby improving the navigation, and decreasing the tendency which now exists to the re-formation of rafts in narrow parts of the channel. Bayou Pierre, from its position, carries off a large body of water—perhaps nearly one-half of the whole quantity in the river; and this water does not again return to the channel until within fourteen miles of Natchitoches. An attempt was made to stop Bayou Pierre, but with only partial success.

The proposed cut-off will be more effectual.

It is extremely desirable that this work be completed during the present season, since upon its accomplishment depends, in a great measure, the settlement of an extensive and exceedingly fertile region. Independent of this consideration, there are others of sufficient weight strongly to urge the necessity of finishing the work this year.

The accumulation of raft during the present high water will add to the expense if deferred. I would respectfully suggest that it appears to me indispensable that a snag-boat remain constantly on the river until the whole of the logs composing the raft shall have been floated off, and the current shall have enlarged the present channel till it is capable of holding the water which must pass through it; until this is accomplished, there will be a constant accumulation of small rafts, formed by the drift lodging against the trees that have fallen in. Unless a boat be kept in the river during the summer, to break up and disperse these small rafts while they are of inconsiderable extent, they will be so consolidated before the winter navigation commences as to give much trouble in their removal, and cause serious difficulty in the navigation. The new boat "Eradicator" is well calculated for this duty, and, with a suitable crew, would render essential services during the season.

It is difficult to form a just conception of the magnitude of this work, or fully to appreciate the important results that are to flow from it.

The river is navigable more than a thousand miles above the raft, and through a region not surpassed in fertility by any on the continent.

This extensive country is comparatively unsettled; its vast resources and wealth remain to be developed. Although enterprise has pushed forward, notwithstanding the apparently insuperable barrier opposed by the raft, yet hundreds are looking to its removal as the signal for entering the country. The success of the undertaking, once involved in doubt, and the permanent advantages which must result from it, are no longer matters of uncertainty.

The indefatigable industry, zeal, and perseverance of the superintendent have triumphed over difficulties well calculated to intimidate him; bayous have been closed with masses of timber; islands of huge logs, for centuries imbedded together, and covered with living trees, have been removed; the timber composing them has been dragged on shore, or, being cut up and cast upon the current, has passed away.

Indeed, every mile in ascending bears evidence of the immense labor bestowed upon its improvement. This work will be rendered permanent by keeping a snag-boat on the river a year or two after the removal of the raft. By that time the channel will have enlarged itself, the refuse from the old raft will have passed off, and such banks as were liable to cave will have fallen. When all this shall have been accomplished, there is no reason to apprehend the recurrence of a raft on Red river more than on any other of similar extent.

I am, sir, very respectfully,

A. H. BOWMAN, *Lt. of Eng'rs.*

Gen. CHARLES GRATIOT, *Chief Engineer.*

H No. 2.

Estimate of funds required for the removal of the great raft in Red river, for the year 1838.

1.	For	one steamboat, fitted up with machinery and tools complete - - - - - -	$15,000 00
2.	"	Salary of two assistant superintendents six months, at $125 per month each - - -	1,500 00
3.	"	Salary of three assistants and one physician six months, at $100 per month - - -	2,400 00
4.	"	Four steam engineers six months - -	1,500 00
5.	"	Two carpenters six months, at $50 - -	600 00
6.	"	Two blacksmiths and four overseers six months, at $45 per month each - - - -	1,620 00
7.	"	175 men six months, at $20 per month - -	21,000 00
8.	"	Subsistence for 195 men six months, at $8 50 per month each - - - - -	9,945 00
9.	"	Cordage, lumber, iron, and steel - -	5,000 00
10.	"	Wood for two boats (same time) - -	4,000 00
11.	"	Engine stores for same - - -	635 00
12.	"	Two keel-boats, fitted up for quarters for men -	1,000 00
13.	"	Repairs and addition to tools, &c. - -	1,800 00
14.	"	Contingent expenses - - - -	4,000 00
			$70,000 00

LOUISVILLE, KENTUCKY, *November* 8, 1837.

HENRY M. SHREVE, *Superintendent, &c.*

I.

LOUISVILLE, KY., *November* 8, 1837.

SIR: By reference to the monthly reports of the masters of the steam snag-boats Helepolis and Archimedes, on file at the department, it will be seen that 1,894 snags have been removed from the bed of the Mississippi river, and that 18,141 trees have been felled from its caving-in banks, during the year ending 30th September, 1837. On the 14th of November last, the snag-boat Archimedes was stove by raising a large snag, which sunk that boat, and of which the department has heretofore been advised.

The appropriation made by act of Congress of the 2d March, 1837, for replacing that boat, has been applied to that service. A new boat has been built, which was launched on the first day of this month, and will be finished and ready to proceed to work early in December.

The steam snag-boat Helepolis continued her operations from the 1st of October, 1836, to the 6th of March, 1837, when that boat was run up to New Albany, Indiana, where her engines were thoroughly repaired and removed from the old hull to a new boat built by authority of the department. The new boat left New Albany on the 22d of July last, and pro-

ceeded to work in the Mississippi river, where she is now operating. The new boat has been improved in her construction, so as to add to the facilities in removing snags at least twenty-five per cent., which will be seen by reference to Capt. Smith's report of work done in August and September last.

I must again beg leave to recommend the felling of timber from the caving banks of the Mississippi river. Time and experience have sufficiently proved that that operation is very beneficial to the improvement of the navigation, or rather, to prevent the accumulation of obstructions in its channels. The Department has, however, had the opinion of several examining officers of the corps of engineers, who all concur with me in opinion on that subject. I therefore hope that provision will be made for resuming that branch of the work, as per my estimate for next year.

The losses by snags in the Mississippi river during the past year have been but trifling; and those which have occurred have been occasioned by boats being run too close to the shores, or heads of islands. There are now no obstructions of consequence in that river, except such as accumulate from year to year.

The work in the Ohio river was resumed by the steamers "Java" and "Souvenir" in September, 1836, and continued until the 24th of November following. In that time, the dam running from Dog island to the head of Cumberland island was raised to a sufficient height, about one half the distance across the river from the head of Cumberland island. The channel at the head of that island has been much improved during the last year, by raising the dam, and the action of the current on the sand-bar through which it passes. No difficulty has occurred in passing that point by boats that could get over the other shoals above or below its location. The dams at the Three Sister islands, and at Scuffletown bar, stand firm, and the channels over the shoals at those places are of sufficient depth for all boats to pass without touching the bottom. The dam at Three Mile island has not yet been finished; still that shoal is by no means so difficult to pass as it formerly was. The dams at French island require to be raised, particularly that on the Kentucky shore.

I have not been able to resume the works on the Ohio river this year, for want of sufficient appropriation. The sum appropriated at the last year, applicable to the improvement of the Ohio and Mississippi rivers, was $60,000. To rebuild and refit the snag-boat Helepolis required over twenty thousand of that sum. The balance will all be required to work that boat and the Archimedes to the first of March next.

The steamboats formerly bought for the improvement of the Ohio river are all worn out in that service, and the Red, Cumberland, and Arkansas rivers, in some of which they were constantly in operation since they were purchased in 1832. To resume the work on the shoals of the Ohio river below the Falls, it will be necessary to have two new steamboats, with the necessary small boats, to carry rock, quarter men, &c. I must beg leave to recommend that sufficient appropriations be made for recommencing that work at the first low water next summer. There is now no longer a doubt of the practicability of deepening the channels of the Ohio river over the bars, so as to afford at least three feet six inches water at its lowest stage, from the Mississippi to Louisville. The works at the Grand chain, Cumberland island, Three Sisters, and Scuffletown bars, are a sufficient test of the entire success of the plan of wing-dams. Those were formerly the

four worst shoals on the Ohio river. Three of them, The Chain, The Sisters, and Scuffletown shoals, where the first experiments were made, are now unheard of as shoals in the river. The fourth, Cumberland island, where so much difficulty existed during the progress of the work, and for which I was so much abused by the boatmen, is now a good channel; and during the low water of the past summer, no difficulty has existed, nor do I believe it will ever be a shoal hereafter. Still, that work is not quite yet completed. It is necessary to add some rock to the dam, to elevate it two feet higher, four hundred yards in length, on the end that joins Dog island.

To enable the superintendent to proceed with this plan of deepening the channels of the Ohio river below Louisville in 1838, it will require an appropriation of at least $80,000; and to continue the improvement of the navigation of the Mississippi river, from the mouth of the Ohio to New Orleans, $50,000, making an aggregate sum for the improvement of the Ohio and Mississippi rivers, from Louisville to New Orleans, of $130,000, and for which I have submitted an estimate as much in detail as the nature of the work will admit.

I am, sir, very respectfully,
Your obedient servant,
HENRY M. SHREVE,
Superintendent, &c.

Brig. Gen. C. GRATIOT,
Chief Engineer, Washington.

I.—No. 1.

Estimate of funds required for continuing the improvement of the navigation of the Ohio and Mississippi rivers, from Louisville to New Orleans, during the year 1838.

	Dollars.	*Dollars.*
1st. For safe-keeping and repairing the steam snag-boats Helepolis and Archimedes, from the 1st of March to the 1st of July, 1838,	4,000	
2d. For wages of crews of same boats, from the 1st of July, 1838, to the 1st of March, 1839, at $1,000 per month each,	16,000	
3d. For subsisting crews of same boats eight months; eighty men, at $8 50 per month each,	5,440	
4th. For wood required for the same boats eight months; 5,000 cords, at $2 75,	13,750	
5th. For engine stores, iron, lumber, and cordage, for the same boats eight months,	4,000	
6th. For paying and subsisting fifty men four months, to fell timber on the caving in banks of the Mississippi,	6,810	
		50,000
7th. For purchasing two steamboats to tow stone boats to build dams in the Ohio river,	24,000	
8th. For thirteen boats to carry rock and quarter laborers in on the Ohio river,	6,500	
9th. For wages of two assistants, at $125, for four months,	1,000	
10th. For wages of fourteen overseers and mechanics,	3,000	
11th. For wages of two hundred and fifty men four months, at $20,	20,000	
12th. For subsisting two hundred and sixty-six men four months, at $8 50,	9,044	
13th. For 2,000 cords of wood, at $2 50,	5,000	
14th. For iron, steel, and tools, to be added to the stock on hand,	5,000	
15th. For engine stores, lumber, and cordage,	1,456	
16th. For contingent expenses, hospital stores, transportation, my allowances, &c.	5,000	
		80,000
		130,000

Louisville, Kentucky, *November* 8, 1837.

HENRY M. SHREVE, *Superintendent, &c.*

I.—No. 2.

MEMPHIS, *August* 31, 1837.

SIR: In conformity with your instructions, I have twice during the past year visited and inspected the works progressing under the superintendence of Captain H. Shreve, for improving the navigation of the Mississippi and Ohio rivers.

The same policy has been pursued in prosecution of these works during the current year that has hitherto been observed, and with the same satisfactory results.

My first inspection from Memphis to New Orleans was in November, 1836; and from the same point to Louisville in December of that year. The Helepolis and Archimedes commenced work in October, and continued, the first until the 7th of March, 1837, and the latter until the 14th of November, when she was snagged and sunk.

During this period, the two boats removed from the bed of the river 1,136 snags; and cut from the banks 17,214 trees, which were likely soon to fall. The new boat Helepolis resumed work in July, and by the end of August had removed 334 snags and cut 927 trees. At my second inspection, in March, 1837, the results of the winter and fall work of these boats was manifest in the increased security of navigation. The snags which had accumulated from the caving in of the banks during the spring flood had been generally removed.

After their return from the Red river, the "Eradicator" and "Java," assisted by two machine boats, were engaged on the Arkansas river. On the 1st of September their books exhibit evidence of the removal of 252 snags from the bed of the river, 198 trees felled from the banks, and 823 logs removed from under the banks. I have seen nothing to change my views as to the propriety of continuing the cutting of trees on the banks. A careful observation of the coast, from New Orleans to Baton Rouge, has served rather to confirm the opinion hitherto expressed, that the Mississippi river can be entirely freed from snags only by removing the trees from such points as are liable to cave.

The river from New Orleans to Baton Rouge is not absolutely free from snags, but they form an obstacle to the navigation too unimportant to merit much attention.

The banks of this part of the river have assumed a more gradual slope, and are consequently less liable to cave than those parts where they are perpendicular and loaded with a growth of stupendous trees. In such places the current impinges against the shore with full force, and rapidly undermines and causes it to fall in, together with its covering of trees.

As the settlement of the country advances, the navigation of the Mississippi will improve.

The time is not far distant when, from the mouth of the Ohio to New Orleans, the navigation will be as safe as it now is from Baton Rouge, and from the same cause, viz: the clearing of the banks. In the mean time the usual annual appropriations will serve to keep it clear from snags. I have visited the works on the Ohio but once during the past year, and as the operations had been limited since the former inspection, it was deemed unnecessary to repeat the visit. The channel at Cumberland Island was gradually improving.

That at the Sister Islands was in perfect order. The dam at Three Mile Island not having been completed, the desired improvement in the navigation had not been realized at that point. Flint Island remained much as it had been the previous year. This bar has during the present low water been worse than any bar on the river. It cannot be permanently better until the works already recommended for its improvement shall have been completed. My duties have not permitted me to visit the Cumberland river.

At those periods when my engagements on the Memphis and St. Francis road

would have permitted me to be absent for the purpose, the Cumberland has been too high for inspecting the works.

Such has been the case during the current month, when it was my purpose to have visited that river.

I am, sir, very respectfully, your obedient servant,

A. H. BOWMAN, *Lt. of Engineers.*

To General CHARLES GRATIOT, *Chief Engineer.*

K.

LOUISVILLE, KENTUCKY, *November* 13, 1837.

SIR: The work for improving the navigation of the Arkansas river was commenced in August last by the steam snag-boat "Eradicator," steamer Java and two machine boats. By reference to the monthly reports of the captains of those boats, on file at the Department, it will be seen that during the months of August and September, there were removed from the channel of that river 553 snags, 3,068 logs and trees cut away from under its banks and on bars, and 5,015 trees felled from off the caving in banks.

The laborers employed on the boats in that river have been unusually sickly. The Java, with the machine boats, still continue the operations, and will continue to work until the spring rise in that river, at which time they will be laid up during the high water. The steam snag-boat Eradicator continued her operations up to the 27th of October, ultimo, when she run up to this place for a new crew and a fresh supply of stores; the crew having been shipped in July last up to the 1st instant, it was then contemplated to send that boat to the Red river raft in this month. That boat is now refitting and shipping another crew to work either for the improvement of the Arkansas or Red river, as directed, and will be ready to proceed to either river by the 20th instant. The steam snag-boat "H. M. Shreve," built by Lieut. John Sanders for the Ohio river, is also preparing to proceed to the Arkansas river, and will be ready in a few days to proceed to work. I am of the opinion that nearly all the most dangerous obstructions in that river, from its mouth to Little Rock, will be removed during the ensuing winter and spring. Still there will remain much work to be done in that river, to render its navigation safe. Its banks cave in with every freshet to great extent. Consequently the accumulation of obstructions is very great, and will require more or less work by snag-boats in the channel for many years to come. It is also necessary to fell the timber on its banks, to prevent the rapid accumulation of snags in its bed. I would therefore beg leave respectfully to recommend a further appropriation at the appropoaching session of Congress of $40,000; for which I have forwarded a detailed estimate of funds required for that purpose for the year 1838, which I hope will be approved of by the Department, and appropriated by Congress.

I am, sir, very respectfully,

Your obedient servant,

HENRY M. SHREVE, *Superintendent, &c.*

Brigadier General C. GRATIOT,

Chief Engineer, Washington.

K.—No. 1.

Estimate of the amount of funds required for continuing the improvement of the navigation of the Arkansas river during the year 1838.

1st. For refitting the steam snag-boat Eradicator, - -	$4,000
2d. For refitting machine boats and furnishing quarters for laborers,	1,500

3d. For working the steam snag-boat Eradicator six months,	$15,000
4th. For working the machine boats and felling timber from banks,	8,000
5th. For working steam snag-boat Shreve four months, and refitting the same,	10,000
6th. For contingencies,	1,500
	$40,000

HENRY M. SHREVE, *Superintendent, &c.*

LOUISVILLE, KENTUCKY, *November* 13, 1837.

L.

OFFICE OHIO RIVER IMPROVEMENT,
PITTSBURG, *November* 4, 1837.

To General C. GRATIOT, *Chief Engineer*,
Washington, D. C.

SIR: In obedience to the circular of the Engineer Department, dated 15th August last, I have now the honor to report the progress and state of the operations for the improvement of the navigation of the Ohio river above the falls, on the 30th September, 1837, and to transmit herewith forms Nos. 1, 2, filled up according to the requirements of engineer order No. 4, some drawings of the work and machinery, and an estimate of the funds required for the service of 1838.

The first appropriation for the present improvements was made in 1835, at which time there were neither surveys nor estimates exhibiting the nature of the obstructions, the character of the improvements, or their probable cost. The disposition of this appropriation was placed under the charge of Lieut. Dutton, who made a reconnoissance of the river, the result of which was reported to the Department, with a table exhibiting the number of shoals, the depth of water, and nature of bottom, and drawings of some of those points which were considered to present the greatest obstructions to the navigation. The general plan of improvements proposed was to concentrate the water into one volume when divided into several channels; and the removing of snags, logs, and detached rocks, from the bed of the river. Early arrangements were made for effecting the removal of the snags. A drawing of the boat machinery used for that purpose accompanies this report. Five such boats, with the necessary equipments and tenders, now belong to the river service. In addition to these, a steam snag-boat was constructed this year, so that there is a sufficiency of that kind of machinery to remove all the remaining rocks and snags.

The examination of the river, made by Lieut. Dutton, was necessarily deficient in many of the details of a survey, which preliminary is of vital necessity in works requiring plans adapted to the irregular features of the bed and channel of the river. Last year the requisite instruments for making a survey were ordered for the works, some of them were received in time for me to have it commenced this summer.

The river has been at a more uniformly high stage this season, than during any of the previous ones since the first commencement of the operations for the improvements. Indeed, there has been no extremely low water since the summer of 1833. Throughout the past summer, steamboats either have or could have left this port on any day, the river not having been lower than two feet. It seldom gets below eighteen or twenty inches in the channel. However, the best information I have been enabled to obtain shows that it has been down as low as

fifteen inches. It is at this low stage that the best and most satisfactory survey could be made, the bars being then well defined and the water clear. Most of these bars are susceptible of and require improvement. The velocity of the current at each ripple, the fall of the surface, the depth of water, and the area of the cross section, give the elements by which a comparison can be drawn between them. It is found that the shoalest water is at those points where it is most spread; when it is concentrated it is always deep enough, and never so strong that boats cannot ascend it. I doubt whether there is a point above the falls where the surface velocity will exceed five miles per hour. It is not solely the swiftest current that presents the greatest resistance to the passage of ascending boats. The three principal elements of resistance to ascending boats are: 1st. The velocity of the stream: 2d. The height to be overcome from the fall of the surface; 3d. The shoalness of the water. The exact manner in which these are related and combined in making the resistance, would be a beautiful but most intricate problem to solve. The steamboat Ploughman, having been found unsuitable for the service, was sold. I had a light draught stern wheel boat built, particularly adapted to it; this boat has been used to advantage in towing machine boats, stone scows, &c., transporting materials, and in my examination of the river and the works. In January last, I made favorable arrangements at Louisville for building a steam snag-boat; the boat was launched in May, the engine put up in June, and all the machinery finished in July, so that on the 1st of August the steam snag-boat "H. M. Shreve," (named in compliment to the worthy and ingenious inventor,) commenced work under an experienced superintendent, Capt. J. R. Dillingham. The boat answered my most sanguine expectations; the engine and machinery all working perfectly well. This boat is of sufficiently light draught to work up as far as Letart's falls, drawing but little over three feet. The removal of snags above the falls of the Ohio presents a difficulty and expense not met with in the Mississippi. I refer to the disposition of the root of the snag. In the Mississippi it is dropped into a deep pool, where it immediately embeds itself in the mud; but in the Ohio there is seldom an opportunity of thus disposing of it; we have to carry the roots ashore, and blast them with powder, so as to prevent them again forming snags. When the root has thus to be disposed of, it causes delay and expense equivalent to double of that when it is dropped into a pool. The removal of large snags in the Ohio will average in cost about fifteen dollars apiece.

The classification of the obstructions removed by the boats is into snags, which are trees anchored by their roots; logs, trees without the root; limbs or branches, parts of a tree; stumps; rocks, varying in size from ten to one hundred cubic feet; piles of drift, consisting of several snags and trees lodged in one place; and sunken boats, generally flat-boats laden with coal. The operations for the improvement of the Ohio river are divided into three classes: 1st. The removal of all snags, logs, rocks, and sunken boats, from the bed and channel of the river. In addition to which it is hereafter contemplated to clear away all the leaning and fallen trees from the banks. 2d. The construction of stone dams to concentrate the water into one channel, when it is divided by islands, or from other causes spread over too much space. 3d. A survey of the river, comprising a complete hydrographical and topographical survey, giving the bars, channel, and shores; ascertaining the soundings and velocity of the current; and exhibiting every thing necessary for the most judicious location of the dams, and the formation of the best-adapted project of improvements. The removal of snags, &c., was carried on with the steam snag-boat, and the machine boats worked by manual power.

The steam snag-boat commenced work at Louisville on the first of August, and worked up as far as Letart's falls, removing only the largest and most dangerous snags from the channel. On the 30th September, Captain Dillingham had removed 415 snags, 7 branches or tree tops, 2 sunken flat-boats, and four piles of

drift, making a total of 428 obstructions, at a cost of $4,048 28, being at the rate of $9 44 for each obstruction. The monthly expenses of this boat are about $2,000. The most of these snags were very large, many of them having a diameter of six feet at the butt, and being over one hundred feet long.

Machine boat No. 2, under Captain Benjamin Crooks, an experienced pilot and excellent manager of hands, was worked to great advantage. He started in June, and worked below Marietta; on the the 30th September, having got down as far as Letart's falls, he had removed 317 snags, 85 logs, 20 stumps, 10 rocks, 793 branches, and 6 sunken boats, making a total of 438 obstructions, (not including limbs,) at a cost of $3,419 08, being at the rate of $7 80 for each obstruction.

Machine boat No. 1, commenced at Wheeling on the 1st of August, and by the 30th of September had got as far down as the Long Reach, having removed 103 snags and logs, 7 stumps, 3 rocks, and 2 sunken boats, making a total of 123 obstructions, at a cost of $2,595 43, being at the rate of $21 10 for each obstruction.

Machine boat No. 3, worked between Wheeling and Brown's island, and on the 30th of September had removed 8 snags, 63 logs, 7 stumps, and 14 rocks, making a total of 92 obstructions, at a cost of $1,959 11, being at the rate of $21 29 for each obstruction.

Machine boats No. 4 and 5, were not worked this season, being intended to work in low and clear water, so as to remove the rocks and logs from the bottom of the river. It was deemed inexpedient to start them out as the river continued turbid and high.

The steam snag and machine boats were continued at work during the month of October: all the machine boats, boats for quarters, stone scows, &c., are at this time laid up for the winter, in the very safe and excellent harbor of Steubenville. The steam snag-boat will be sent to the Arkansas until she is again required above the falls. From the commencement of the improvement up to the 30th of September, 1837, there have been 3,303 obstructions of various kinds removed from the channel of the river by means of the boats.

In his report of 1835, on the improvement of the Mississippi, Lieutenant Bowman says: "It is a well-established fact that snags do not move far from where they first fall in, the weight of the earth attached to their roots serving as an anchor. It is also well established that trees which once float seldom form snags. Admitting this, it is sufficiently evident, that, if the banks are once cleared, there can be no subsequent formation of snags." He estimates the average cost of removing each snag, taken out of the Mississippi in 1834, at $8 and in 1835, at $13, the cost increasing as the number in the river is diminished.

His remarks have been confirmed by my own observation on the Ohio. Therefore, the cutting down and clearing away all leaning and fallen trees from the banks, will hereafter form an essential part of the improvements on the Ohio above the falls. There will be more of this kind of work necessary between Marietta and Maysville than on any other part of the river. The steamboats Baltimore, Roanoke, and William Hulbert, have been sunk by snags during the last year. Several other steamboats have been seriously damaged by running against them. It would be almost impossible to ascertain the exact number of flat-boats lost, but there have been a great many.

The construction of the dams at Brown's island for concentrating the water, has progressed very favorably and with the most satisfactory result, in deepening the water in the channel down the Virginia chute. The bar in this chute, which was heretofore the shoalest in the river, has now more water over it than there is at many other points. The increase in depth of water from the concentration by the dams, is between eight and twelve inches. The current has not been increased more than a quarter of a mile an hour at the swiftest place, the greatest velocity

being now 3¾ miles per hour. These are the only dams that have yet been attempted. The success is, however, sufficient to establish the full efficiency of the plan for improving the navigation at other points. The accompanying maps and drawing will give a good conception of the character and object of the works at Brown's island. The wing dam at the middle bar was commenced in September, 1836, and finished in August last. It is 2,246 feet long, between 3 and 4 feet high, with a base of about 20 feet, containing 3,158 perches of stone, which was quarried and transported to the dam at a cost of $11,812 79, being at the rate of $3 74 per perch. This cost includes the purchase of boats and tools which are applicable to other works. The stone in this dam is generally small, of such dimensions that two men could easily handle it. It was cast promiscuously in the dam from the scows. The dam over the head of the Ohio chute, was commenced on the 14th of August last, the stone having been previously quarried. A quarry on the Ohio shore a short distance below the site of the dam, was opened in October, 1836, to furnish stone for its construction, and another on the Virginia shore for the same purpose. The quarrying at both quarries was suspended in August, when it was supposed that stone enough had been got out, there being between 12 and 14,000 perches of stone quarried. On the 30th of September, 4,231 perches of this stone had been boated to and thrown into the dam. The entire expenditure for quarrying and transporting stone to the dam, including the purchase of boats for quarters, stone scows, and tools, (all of which are still applicable to future works,) amounts to $21, 489 20. Allowing $16,000 for the expense of quarrying, $5,480 20 for boating to and throwing into dam, it will make the cost of quarrying and transporting stone to the dam, average about $2 25 per perch. It will take about 6,700 perches of stone to complete the dam, after deducting the work done in October, which amounts to about 2,300 perches. The dam has, therefore, at present about half the quantity of stone intended to be put in it. This dam when completed will be about 2,178 feet long, about 11 feet high at the deepest place. Its section has a base equal to seven times its height, with a flat rounding top, the slope up stream being the greatest and made of the smallest stone, the large stone being thrown into the lower part or breast of the dam. The top of the dam is to be on a level with the water, when the river is at a four feet stage on the shoals. By reference to the drawing, the position of the dam will be found nearly parallel to the opposite shore, and connecting the Ohio shore with the head of the Island bar in such a manner as to gently deflect all the water at a low stage down the Virginia chute. This dam has to meet but little resistance, and is relatively so low and so completely submerged at high water that it will not even make a break—boats of all kinds being then able to pass over it with facility.

On account of the unfinished state in which it is necessarily left, I apprehend that a few slight breaches may be made in it this winter; but after it is completed next year, I feel confident of its withstanding any shock it may receive from either drift or ice. The survey of the river cannot be carried on with great celerity except at a continued low stage of water. The repeated freshets very much interfered with the prosecution of it this season. It is quite fully completed as far down as Steubenville, and partially so from Steubenville to Wheeling. As soon as the maps and drawings can be made out, copies will be transmitted to the Department, with the projected improvements laid out on them.

The fall of the river from Pittsburg to Wheeling is 79,167 feet, and the distance being 88 miles and a fraction, makes the average fall at the rate 10.69 inches per mile. The greatest surface velocity as yet ascertained at any ripple, is at the rate of four miles per hour, and the greatest fall is at the rate of six feet per mile. I have drawn up a table of the bars, ripples, &c., between this place and Wheeling, giving the average depth of water, velocity of current, and rate of fall. The bars and ripples are numerous and close together in the upper

part of the river. In low water the fall of the river is confined to the ripples, the intermediate pools being nearly stagnant and almost level. But as the river rises, the water gradually attains a uniform slope or fall on the surface, which becomes nearly parallel with a line passing through all the highest points of the bottom of the channel. The most irregular of those points can be reduced into that line, without altering the regimen of the river, and that is as deep as I would be willing to excavate on the bars. The channel from Pittsburg to Wheeling is narrow, and has many short turns, requiring for low water navigation narrow and short boats. The width can be increased to 200 feet with safety, and the curves straightened. This, united to the concentration of the water, and consequent increase of depth, (which I calculate can be improved so as never to be under 30 inches, and seldom lower than 3 feet,) will afford a navigation that will answer all the purposes of commerce and travelling, as it would enable boats of 100 tons burden, carrying passengers, to run at the lowest stages of the river. Whenever the navigation throughout the season becomes regular and certain, the expenses of the boats will be greatly reduced, and such rates of freight and passage, as were unprofitable to the boats this season, might then become customary and yield a fair profit to the owners. Merchandise would be transported at the rate of two thirds of a cent per ton per mile, and passengers at the rate of one sixth of a cent per mile. I am now well prepared with boats, machinery, and tools for carrying on the improvements, and am sufficiently familiar with those points most urgently requiring improvement to expedite the work to great advantage. So that I would respectfully suggest, that an appropriation should be requested as soon as practicable for that purpose. The accompanying estimate, which amounts to $253,000, will show how it is contemplated to apply the funds called for: about $95,000 for removing obstructions from the bed and channel of the river, and clearing the shores of the fallen and leaning trees; the remainder for building dams, continuing surveys, &c. All the appropriations, and the proceeds of the sale of public property, amount to $119,648 02; the expenditures up to the 30th of September, to $131,090, leaving a balance of $11,441 98, available for this quarter. The greater part of this balance has been expended on account of the operations of last month. The amount now on hand will be required for the current expenses of the winter, in taking care of boats, &c. The disbursements on account of the improvements of the river, have continued to be made by the Merchants and Manufacturer's Bank of Pittsburg with their former correctness and punctuality, and always in funds which were at par with the currency at the place of payment. All of which is respectfully submitted.

And I have the honor to remain, sir,

Your most obedient servant,

JOHN SANDERS, *Lt. Engineers.*

Estimate of funds required for continuing the operations for improving the navigation of the Ohio river above the falls, during the year 1838.

Removing snags and clearing shores.		
Expenses of steam snag-boat, including pay and subsistence of officers and crew, and cost of fuel for six months, at the rate of $2,000 per month, - -	$12,000	
New rigging, tools, materials, and repairs, - -	3,000	
Expenses of five machine-boats worked by manual power, including pay and subsistence of superintendents and crews, for five months, at the rate of $1,000 each per month, - - - - -	25,000	
Repairing and equipping boats, new rigging, tools and materials, $1,000 each, - - - - -	5,000	
Cost of five flat-boats fitted up as quarters for sixty men each, with furniture, scows, skiffs, and tools, $1,000 each, - - - - -	5,000	
Pay, subsistence, and superintendence, of five parties of sixty men each, employed in clearing shores of fallen and leaning trees and lodged drift, for six months, at the rate of $1,500 per month for each party, - - - - - -	45,000	
		$95,000
For the construction of dams for the permanent improvement of the channel.		
Dam at head of Brunot's Island, - - -	15,000	
Dam at head of Long Island, and improvements at Horsetail ripple, - - - -	10,000	
Dam at Duff's bar, - - - -	10,000	
Dam at White's ripple and trap, and widening channel at Trap, - - - - - -	20,000	
Improvements at Dead Man's Island, - -	5,000	
Dams at Logtown bar, and altering channel, -	15,000	
Dam at Beaver shoals, and the opening of a new channel, - - - - -	20,000	
Dam at Rackoon bar, - - - -	5,000	
Dam at Black's Island, - - - -	10,000	
Completion of dam at Brown's Island, - -	6,500	
Dam at Merigo's Island, - - - -	10,000	
Dam at Captina Island, and opening new channel to the right of the island, - - - -	15,000	
		141,500
Expenses of light draught steamer for seven months, at the rate of $700 per month, - - -	-	4,900
Continuation of survey, making maps, drawings, &c.	-	5,000
Instruments, drawing paper, &c. - - -	-	600
Office expenses, stationery, &c. - - -	-	1,000
Contingencies, - - - - -	-	5,000
		$253,000

JOHN SANDERS, *Lt. Engineers.*

Table exhibiting the depth of water, rate of fall, and velocity of current, of the various ripples between Pittsburg and Captina Island.

Name.	Depth.	Rate of fall.	Velocity of current in miles per hour.
Glasshouse Ripple	2′ 6″	1/1466	
Foot Brunot's Island	2 4		
Horsetail Ripple	3 6	1/802	
Lowrey's do.	3 2	1/1314	
Duff's do.	2 4	1/1582	
Merriman's do.	2 10	1/1908	2 1/2
White's do.	3 4	1/981	3
Wollery's Trap	2 4	1/958	
Deadman's Ripple	2 8	1/738	3 15/20
Sewcchly Bar	3		
Logtown Bar	2 6	1/1516	
Crow's Island	3 2		
Hog do.	4 4		
Atkinson's Bar	3		
Beaver Shoals (head)	3 6		
Do. (middle)	3		
Do. (foot)	2	-	2
Rackoon Bar	2 4		
Montgomery's Island	3 2		
Phillis's do.	3 8	1/1283	4
Georgetown do.	4 2	1/1837	3 1/5
Line do.	3 2	1/1216	
Babb's do.	3 4		
Yellow Creek Bar	3 4		
Wellsville Bar.			
Baker's Island	3	1/3612	
Kneistloy's Cluster	2 4	-	3
Hardings's Run.			
Black's Island	2 6		
Coxen's Run.			
King's Creek Bar	3		
Brown's Island	3 3	1/1806	3 3/4
Will's Creek	4		
Steubenville Bar	3		
Will's Bar	2 8		
Merigo's Island	2 6		
Cross Creek	4		
Cox's Bar	2 10		
Wellsburg.			
Beechbottom Bar	2 6		
Short Creek	2 8		
Pike Island	4		
Twin Islands (head)	3 6		
Do. (upper)			
Do. (foot)	2 4		
Do. (upper)			
Burlington Bar	2 6		

TABLE—Continued.

Name.	Depth.	Rate of fall.	Velocity of current in miles per hour.
Wheeling Island (head) - -	3′		
Do. (foot) - -	2 8″		
Bogg's Island - - -	3		
McMahon's Creek - -	3		
Patterson's Bar.			
Little Grave Creek.			
Big do. - -	4 6		
Captina island - -	2		

M.

Annual report of the work done to improve the navigation of the Cumberland river, in Tennessee and Kentucky, above Nashville.

The improvement of the navigation of the Cumberland river above Nashville was commenced on the 1st day of September, at Nashville, with eighty laborers, and on the 4th at Carthage, Tennessee, with one hundred laborers. The improvement was confined to cutting down, belting the timber overhanging the channel way, sharp points, deep bends of the river, removing rafts and snags, &c.

The superintendent, with his company, worked up the river, and cut up every thing thought necessary, from Nashville to Walton's ferry, distance ninety miles.

Captain Hone commenced at Carthage, on the 4th of September, with one hundred laborers, and from that time to September 30th, agreeably to his report, cut down 7,168 trees, belted on the banks 1,247 trees, cut loose 15 rafts, and removed 34 snags, between Carthage and Buffalo Island, distance thirty miles. This gentleman reports this part of the river more difficult and important to improve than any other part of the Cumberland river.

All the laborers under the command of the superintendent, with forty-seven of Captain Hone's company, were paid off at Walton's ferry, on the 30th of September, owing to the river rising. The other company, of fifty-three laborers, was continued under pay, for the purpose of finishing some fifteen miles above the ferry. This company is now at work above Carthage, under the command of Captain T. M. Hale.

Herewith you have an estimate of funds necessary to continue this improvement in the summer and fall of 1838.

I am, sir, respectfully,
Your obedient servant,
W. McKNIGHT,
Superintendent, &c.

To Brig. Gen. C. Gratiot,
Chief Engineer, Washington.

N.

Fifth annual report of work done in improving the navigation of the Cumberland river below Nashville, Tennessee, for the months of October and November, 1836; and the months of April, May, June, July, and August, and the machine snag-boat, for September, 1837.

The improvement of the navigation of the Cumberland river, in Tennessee and Kentucky, below Nashville, was continued from the 1st of October to the 22d of November, 1836, at Dover Island, Island chute, and shoals below: 1st, by constructing a wing-dam from the main left shore, across the Island chute, and covering the head of the island, measuring four hundred yards long, and from five to six feet high, base from eight to twelve feet. The embankment in the Island chute is about one hundred and twenty-five yards long and three feet high. The embankment at Dover shoals is four hundred and fifty yards long, and averages five feet high. The boats were then laid up for the winter, and arrangements made to rebuild the machine snag-boat with the officers and laborers employed to take care of the boats.

On the 1st of April, 1837, the work was again commenced at the Harpeth shoals, with fifty laborers, and finally increased to seventy-five. They were employed first in repairing and adding to the height of the lower embankment, and connecting the upper with the lower wing dams; thus covering the whole Harpeth Island and sand bar. The new work measures seven hundred and forty yards, making the whole work at this place measure two thousand one hundred and twenty-five yards. This improvement now gives to the large steamboats from two hundred and fifty to three hundred tons more than they could previously convey to Nashville, and, to the small boats, a safe and uniform channel.

The enclosed sketch,* although imperfect, will give you some idea of its present appearance, with a proposed improvement below the mouth of Sycamore creek and the Harpeth river, now the shoalest water in all the Harpeth shoals; it was between these two points that we grounded the "Laurel," and lost her services from the 27th of August to the 30th of September. About sixty yards of the embankment (new work) at the head of the island gave way in August last.

The machine snag-boat commenced work at the Harpeth shoals on the 1st of August, with sixteen laborers, and, up the 30th of September, removed from the channel of the river one hundred and ninety-four snags, one hundred and ninety-two logs and roots, one keel-boat hull, and flat-boat loaded with iron. She was overtaken at Line Island, Kentucky, by high water, on the 30th of September, when her crew was paid off, and the boat and quarter boat was towed up to the improvement *above* Nashville, where she is now at work.

On the 7th of August I arrived at Dover shoals with the United States steamboat Laurel, and eighty laborers, and commenced work by preparing and boating rock to the different embankments. On the 15th, the water rose some seven or eight feet, and covered all the rock that we had prepared. Left with the steamboat, quarter, and rock boats, for the Harpeth shoals, where we arrived on the 17th, and commenced boating rock. The fine stage of water enabled us to load the steamboat. The work was continued up to the 28th of September, the water falling so fast that we grounded the steamboat, and lost her services up to September 30th.

The improvement below Nashville will require a further appropriation, or part of the work will be rendered in a short time almost entirely useless, the *crevasse* at the head of Harpeth and Dover Islands will continue to give way unless soon

* The drawing referred to in this document is omitted to be printed, under the order of the House of Representatives of September 11, 1837.

secured; and there yet remain the contemplated improvements at the mouth of Sycamore creek, Harpeth river, Palmyra Island, Devil's chute, Shelby's Island and shoals, and Ingram's shoals, unimproved, as was recommended by Captains Delafield and Shreve, in their report in the fall of 1832. Even $5,000 would be of great service. I believe this amount would enable me to secure the embankments.

Extent of the stone embankments on the Cumberland river below Nashville.

Flax Patch bar,	650	yards.
Harpeth Island,	2,125	
Davis's Ripple,	375	
		3,150 y'ds.
Dover Island, (head,)	400	
Dover Island chute,	125	
Dover Island shoals, below,	450	
		975 y'ds.
Line Island, Kentucky,	513	
Keel-boat chute,	485	
Steamboat chute,	685	
		1 683 y'ds.
		5,808 y'ds.

I am, sir, your obedient servant,

WM. McKNIGHT,
Superintendent, &c.

To Brig. Gen. C. GRATIOT,
Chief Engineer.

N.—No. 1.

General estimate of funds required to complete the improvement of the Cumberland river in Tennessee and Kentucky, below Nashville, for the year 1838.

1	A wing-dam at Nashville Island,	$3,000
2	Improvement at Sycamore creek, one mile below Harpeth's improvement,	5,000
3	Securing and making more permanent the embankments at the Harpeth Islands,	2,500
4	Removing a ledge of rocks at the mouth of Harpeth river, and three hundred yards of embankment at the same place,	5,000
5	A wing dam at Palmyra Island,	4,500
6	Repairing and extending the embankments at Dover shoals,	3,000
7	Finishing the embankment at Davis's ripple,	500
8	Removing the obstructions at the Devil's chute, in Kentucky,	2,500
9	Improvement at Shelby's Island and bar below,	4,000
10	Improvement at Ingram's shoals,	8,000
11	Removing the obstructions at Martin's Wild Cat, Wells's Island shoals, McNabb's bar, Big and Little Eddy, Big and Little Horse Ford, and a reef of rocks below Camp Rowdy,	12,000
		$50,000

W. McKNIGHT,
Superintendent, &c.

HAYSBORO', *October* 20, 1837.

O.—No. 1.

Report of the condition of "five Roads" in Michigan, by Lt. Col. B. K. Pierce.

WASHINGTON CITY, *October* 4, 1837.

SIR: I have the honor to report that, in compliance with your instructions, I have carefully examined every part of the public road leading from Detroit to Chicago, extending from Detroit to the Indiana line, about one hundred and eighty-four miles. The road from Detroit to Ypsilanti, distance about thirty miles, was made through a low, heavily timbered, and, in some places, marshy country. This part of the road is literally worn out. Horses and loaded wagons sink deep in the mud, and it is difficult for wagons heavily laden to pass over it. It is difficult to make this portion of the road good, consequently it will be expensive to make the repairs and complete it according to the original design. I have estimated the expense to Ypsilanti, thirty miles, at $500 per mile, making $15,000. From Ypsilanti to the Indiana line, distance about one hundred and fifty-four miles, the country is generally high and open, and the roads are good. Some portions, however, require repairs. Eight thousand dollars judiciously expended will put the whole of this latter portion in good repair. It is therefore estimated that $23,000 will be sufficient to put the Chicago road, from Detroit, one hundred and eighty-four miles, to the dividing line between Michigan and Indiana, in good repair.

I have the honor to be, most respectfully,
Your obedient servant,
B. K. PIERCE,
Lt. Col. U. S. A. on Eng. service.

To General CHARLES GRATIOT,
Chief Eng. U. S. A., Washington City, D. C.

O.—No. 2.

WASHINGTON, *October* 4, 1837.

SIR: I have the honor to report that, according to your instructions, I have carefully examined the condition of the road leading from Sheldon's to the mouth of the river St. Joseph's, in the State of Michigan. The distance from Sheldon's to the mouth of the St. Joseph's river is about one hundred and sixty miles. The country through which the road passes is well adapted for roads, being generally high, dry, and hard. This road is generally very good. There are, however, a few exceptions. From the east bank of the river, at the ferry of St. Joseph's, there is a low marsh, over which the road extends nearly a mile. It is there narrow and inundated with water, difficult and unsafe to pass.

I estimated the expense of making this portion of the road a proper width, safe, and permanent, at $3,000, and the necessary repairs for the remainder of this route at $2,000, making the amount necessary to put the Sheldon and St. Joseph's road in proper repair, $5,000.

I am, sir, most respectfully,
Your obedient servant,
B. K. PIERCE,
Lt. Col. U. S. A. on Eng. service.

To General CHARLES GRATIOT,
Chief Eng. U. S. A., Washington City, D. C.

O.—No. 3.

WASHINGTON, *October* 4, 1837.

SIR: I have the honor to report that I examined a part of the road leading from Clinton to Grand river rapids. The road from Clinton to Jacksonsburg on the Grand river, distance about twenty-five miles, runs through an open, high, and dry country, and is generally very good. And from Jacksonsburg, fifty-six miles in the direction to the rapids, the road runs over a high country, and can be passed without difficulty. From the point last mentioned there is no road to the rapids. I am told that there is a heavy growth of timber all the way through—distance I suppose about seventy miles; and that no survey has yet been made. I have therefore no data from which to form an estimate of what was the original design, nor what may be the expense of making a road through to the rapids of Grand river.

Most respectfully, your obedient servant,

B. K. PIERCE,
Lt. Col. U. S. A., on Eng. service.

To General CHARLES GRATIOT,
Chief Eng. U. S. A., Washington City, D. C.

O.—No. 4.

WASHINGTON, *October* 4, 1837.

SIR: I have the honor to report that I have examined the road leading from Niles's to the mouth of the St. Joseph's river It runs generally through a heavily timbered country; an equal part of it low and muddy, and generally in bad condition for travelling.

To make a good turnpike road from Niles's to the St. Joseph's, distance twenty-five miles, will require $10,000.

I am, sir, very respectfully,
Your obedient servant,

B. K. PIERCE,
Lt. Col. U. S. A., on Eng. service.

To General CHARLES GRATIOT,
Chief Eng. U. S. A., Washington City, D. C.

O.—No. 5.

WASHINGTON, *October* 4, 1837.

SIR: I have the honor to report that I have examined the Saginaw road, leading from Detroit to Saginaw. The road from Detroit to Bloomfield, distance eighteen miles, passes through a low, heavily timbered, miry country, formerly called the Black swamp. Although this part of the road appears to have been originally well made, still on my arrival I found it almost impassable for teams. Indeed, the nature of the soil is such as to render it difficult to make a hard road.

A company made an application last session of the Legislature of Michigan, and received a grant for a turnpike for the eighteen miles above described, with the right to erect gates, and collect tolls for twenty-one years, on condition of the roads being made and kept in good order and repair. I have therefore not made an estimate of that part of the Saginaw road. The road from Bloomfield to

Pontiac, and thence four miles beyond the Flint river, is an excellent finished road, and in good repair. The road thence to Saginaw, distance about thirty-four miles, is almost impracticable for horse or footman, and entirely impassable for teams or carriages. I estimated the expense of making a good, permanent road over that distance at $45,000. It seems to be the general impression there that the Goverment is pledged to construct this road, and, for the want of one, the emigrants are disappointed, and prevented from settling in that region of the State. It is deemed very important to the State, and to the Government of the United States, (the latter having large bodies of land yet to be sold lying north of the Saginaw river,) that this road should be completed, opening an interior communication between Detroit and Saginaw.

All of which is respectfully submitted.

B. K. PIERCE,
Lt. Col. U. S. A., on Eng. service.

To General CHARLES GRATIOT,
Chief Eng. U. S. A., Washington City, D. C.

P.

MEMPHIS, *October* 9, 1837.

SIR: I have the honor to submit the following report of the operations on the Memphis and St. Francis road, during the past year.

The same causes which have hitherto influenced the progress of that work have operated during the current season. It has been found impossible to assemble an adequate force. Upon the approach of the sickly season, the white laborers generally abandoned the road. During August and September there were not twenty laborers left, except slaves, who were employed by the year. The few whites that remained were all sick. Blacks are not liable to the diseases of the swamp, and have generally during the summer been healthy. Early in September the hands began to come in from the upper country, and the prospects of the work were most cheering.

By the 22d of September the number of hands exceeded two hundred, and several other organized companies were on their way to commence work for the winter. Up to this period, the season had been unusually propitious, having been dry and pleasant

On the 24th of September the rain commenced, and continued, with little interruption, until the 1st of October, by which time the site of the road, from where the embankment was finished to the St. Francis, was one sheet of water, unbroken except by a few solitary ridges of ground, which, being some inches higher than the rest of the country, were not entirely immersed. The effect of this rain, in a country so perfectly level, was most disastrous. Nothing could be done until the waters subsided. The floors of the shanties were flooded; the laborers were driven to the tops of the building, or on the finished embankment, where the most of them camped in the rain until the waters retreated, which was not until the expiration of a week. This state of things drove many hands from the work, and rendered it necessary to turn off others, who applied for employment at the time. The ditches which had been opened, of large dimensions, for the purpose of draining this part of the bottom, were covered, and in no way distinguishable from the unbroken sheet of water which flowed over them.

The weather since the equinoctial storm has been fine, and the work is now actively progressing, with about two hundred hands on the near end, and one hundred and thirty on the farthest end.

Preparations will be made for the approach of the rainy season, by the establishment of depots of provisions at such points in the swamp as are not liable to overflow from ordinary rains. Unless such magazines are now established, it is impossible to supply the hands—the intermediate road being utterly impassable for vehicles of any description after the rains commence.

Plan of operations.

No change in the plan of operations adopted last year has been found necessary during the current season. The embankment is constructed by hired laborers. The only contract existing at present upon the road is one for the construction of that portion between the 35th and 38th mile-posts. This was submitted to, and approved by, the honorable Secretary of War on 1st of November, 1836. So far as it is practicable, the work is finished as it advances into the swamp. This is important to facilitate the transportation of provisions, implements, &c. It is not, however, possible to pursue this plan to the desired extent.

The approach of the rainy season renders it necessary to divide the laborers, and assign them to such elevated points as are above the water. I may here remark that the difficulties encountered from water arise in a great measure from the heavy rains. The annual overflow of the Mississippi and St. Francis rivers seldom reaches far into the swamp, and remains, at longest, but a few weeks. The rains (which commence just at the time when those who have fled from fear of fever are returning) cover the ground from ten to thirty-six inches with water. This has scarcely time to flow off before it is succeeded by another rain. In summer most of the swamp is perfectly dry; then the fever drives all but negro laborers from the road; if these could be had in sufficient numbers, the work would speedily be completed.

Causes which have affected the advancement of the work.

The causes which have from its commencement exercised a prejudicial influence over the progress of this work are too well known to the department to need repetition. There is now a probability that labor will be abundant. At present, more hands are offering than can be advantageously employed at this season. The want of laborers has hitherto been a prominent difficulty.

Change in the original plan.

The only change from the original plan is on that portion of the road already referred to as being under contract, viz: from the 35th to the 38th mile-posts. Between these two points, the location has been changed farther south. Two important advantages were gained by this change, viz: it is shorter than the other route by six hundred yards; and crosses Sand slough at a point where it may be bridged. These circumstances were submitted to the honorable Secretary of War, who decided in favor of the southern route, and at the same time accepted the proposal of the contractor to execute the work of the new route for the same sum he was to have received for the original one.

Progress of the work.

Since the last annual report, the work has been completed as far as the 1st quarter of the 20th mile, on the east end. The 39th mile on the west end is complete. The 38th mile is nearly finished. The 36th and 37th will probably be done by the expiration of the present year. Ditches have been excavated of large dimensions at the foot of the slopes of the embankment on the 20th, part of the 21st, the 32d, 33d, part of the 34th, 35th, part of the 36th, and 37th miles.

These ditches subserve the double purpose of draining the water of ordinary rains, and the embankment from them serves as a temporary road, and greatly facilitate the transportation of provisions, &c.

Bridges have been erected over Lloyd's bayou, Millseat Lake bayou, the first

bayou on 20th mile, and two sloughs west of Sand slough. Less damage has been sustained, during the current year, from washing of the embankment by heavy rains, than during the last season. Since my last report, the companies have passed over the whole road, from the 1st to the 20th mile, and repaired such damages as were sustained by the work from the above cause, and also from settling. The aggregate amount of embankment required for the purpose, I estimate at one fifth of the original quantity.

Resources of the country.

It has already been stated that the country, from the 17th to the 38th mile of this road, is wholly incapable of supplying any of the articles of produce required for the support of the laborers on the work, or of contributing in any way to the advancement of the operations, being a low, flat, unproductive waste, not susceptible of any improvement, and, with the exception of a few isolated spots, can never be inhabited. In such a country, innumerable difficulties are to be encountered in the execution of a public improvement, that are unknown in a thickly settled and productive region. The importance of this work arises rather from its being the principal inlet to the State of Arkansas, than from any resources which it is likely to develop in the immediate vicinity of its location. The country for 16 miles from the river, on each side of the road, is fertile, and will ultimately be rich in all the products of this latitude. The continuation of the road beyond that point derives its importance wholly from its being the only passable route from the east side of the Mississippi into the interior of Arkansas.

Notwithstanding the difficulties encountered in crossing that portion of the swamp where the road is unfinished, there were eleven hundred and twenty-seven emigrants, one hundred and twenty-seven heavy teams, together with the usual allowance of cattle, horses, &c., passed during the month of September last; the transient passing and the travel in the opposite direction are not included in this statement. An estimate for the completion of the work will accompany this report. The amount called for will fall short of the original estimate, when the difference in the price of labor and provisions at the time that estimate was made, (1834) and the present prices, is taken into consideration. I beg leave to call the attention of the department to the fact, that labor may now be had to any requisite extent, and to urge this in the strongest terms as a reason why the maximum estimate be, if possible, appropriated at the ensuing session of Congress. It will be recollected that the want of a sufficient number of laborers has been the greatest difficulty of this work.

The experience of three years has conclusively shown that laborers will not remain in this swamp, when they can find employment elsewhere. It appears to me, therefore, of the utmost importance to take advantage of the present abundance of labor to complete this road—the last appropriation will probably last until the middle of the 1st quarter of 1838. I take this occasion to state that, from the impassable nature of the country between the 21st and 35th miles of this road, during a large portion of the year, the advantages derived from what has already been finished, beyond the facilities given to those occupying the first 17 miles, will be comparatively small. *If but one mile were left unfinished, it would, during a portion of the year, as effectually cut off all travel, as if the whole had remained the unimproved quagmire which I found it three years since.*

I am, sir, respectfully, your obedient servant,

A. H. BOWMAN, *Lieut. of Engineers.*

To General CHARLES GRATIOT,
Chief Engineer.

P.—No. 1.

Estimate of funds requisite for the operations on the Memphis and St. Francis road, during the year 1838.

Nature of workmanship, materials, and contingencies, embraced in the intended application of the funds estimated for.	Extent.	Maximum.	Minimum.
Laborers and overseers,	-	75,600 00	64,260 00
Provisions for laborers,	-	29,698 50	25,243 30
Ditching,	-	17,077 00	14,515 45
Clearing site,	2½ miles,	1,250 00	1,250 00
Bridging,	725 feet,	1,625 00	1,625 00
Teams,	6 yoke,	300 00	300 00
Implements,	-	1,049 33	891 93
Transportation of provisions,	-	4,504 32	3,828 67
Contingencies,	-	5,784 00	5,784 00
Dollars,	-	136,888 15	117,698 35

Maximum required,	$136,888 15
Minimum required,	117,698 35

A. H. BOWMAN, *Lieut. Engineers.*

Q.

Memoir on the progress of the operations on the Cumberland road east of the Ohio, during the year ending 30th September, 1837.

PHILADELPHIA, *November* 14, 1837.

At the date of my last annual report, 30th September, 1836, on the repair of the Cumberland road east of the Ohio, there remained unfinished the stone bridge over Will's creek near Cumberland, and the cast-iron bridge over Dunlap's creek, between Brownsville and Bridgeport.

During the fall of 1836, the masonry of the bridge over Will's creek was finished; the filling between the wing walls was made, the surface or roadway was Macadamized, and a wrought-iron railing put up on the whole length of the bridge and wing walls, which completed this structure; the total cost of which has been $27,101 89, constructed of large masses of compact limestone, crossing the entire valley of Will's creek, measuring 291 feet in length, from extremes of the wing walls, 26 feet 8 inches in height, from water line to level of the roadway, formed of two elliptical arches, each 59 feet span, with a rise of 15½ feet; the stones forming the voussoirs of the arch being large, massive pieces, cut perfect from extrados to intrados, and side to side of the bridge, to fit the curvature of the arch, and the joints square, with the tangents to the ellipses: the whole laid in lime mortar, and pointed with cement—a work of great durability, most excellent material, and skilfully put together, at a total cost very far within the sums usually paid for bridges of like durability, material, and workmanship.

Messrs. McClean and Sumner were the contractors who executed and finished the principal part of this bridge.

The masonry of the Dunlap's creek bridge, the arch of which is to be of cast-

iron, was continued during the fall of last year, and finished in September of this year. It is constructed of very large heavy masses of stone, with beds and joints cut true from face to rear of the walls—laid in cement mortar where exposed to the water, and on the outside, and with cement mixed with lime mortar on all other parts.

This work is nowhere in that district of country exceeded in its execution for durability and workmanship, and performed by Messrs. Keys and Searight, under a contract.

The quantity of masonry laid is 3,806 10-25 perches, crossing a valley of 320 feet from extremes of the wing walls, and 42 feet high.

The cast iron for the arch of this bridge is *not entirely finished.* The five centre sections of the elliptical cylinders (voussoirs) and two flooring plates, or seven pieces of about 8¼ tons, remain yet to be cast. The castings already made weigh 317,476 pounds, composed of 230 pieces, some of them weighing over 6,000 pounds. A few pieces of castings (St. Andrew's crosses, and road-sustaining plates) yet remain to be fitted together. The wrought-iron railing remains to be made, which constitutes of itself about three-sevenths of the work yet to be done.

Last year there was on hand $29,968 87, when I asked an additional appropriation of $7,183 67 to finish the repairs of the whole road, at which time I estimated this bridge would cost $27,870. I now find, after having expended $27,626 76, that the bridge is not finished, and in the condition just set forth. It has been necessary to build the eastern wing walls deeper than was first supposed necessary, increasing the masonry thereby 206 perches, and the excavation 190 yards, at a cost of $1,340; and that there will be 27,356 pounds more of castings than was first estimated, which increases the cost $1,230; and that the fitting the castings has exceeded the sum estimated by $2,480 40.

In addition to which, there are some small items not enumerated in the estimate of last year—such as Macadam metal for roadway, scaffolding for raising the bridge, tar and paint for preserving it from rust, and earth for filling the wing walls after this winter's settling; making, with the cost of the iron railing, a sum of $7,000 necessary to finish this bridge.

In again asking an appropriation to finish this work, the only explanations I have to offer for its necessity are the facts set forth above, that have arisen from the novelty of the undertaking; nothing of the kind ever having been executed in this country, so far as I can learn, and no individual concerned in its construction ever having worked on similar operations.

A descriptive memoir of this cast-iron structure, together with two sheets of drawings, illustrating the principles of its construction, and exhibiting the dimensions and details of the various parts, as also a drawing of the Will's creek stone bridge, accompany this memoir.

All the iron castings and other parts of the cast-iron bridge have been placed in storage at Brownsville; and the services of the superintendent and every other individual concerned in its erection dispensed with, until funds shall be appropriated for finishing it, which will require about two months' work.

All of which is respectfully submitted by

Your obedient servant,

RICHARD DELAFIELD,
Captain of Engineers.

To Brig. Gen. C. GRATIOT,
Chief Engineer.

Q.—No. 1.

Detailed estimate of the funds required to complete the Dunlap's creek bridge.

For 16,150 pounds of wrought-iron railing, being 680 feet at $4	$2,720 00
For 16,302 do. castings (5 cylinders and 2 flooring plates) at 4½ cts. per pound	733 59
For 1,500 pounds of wrought-iron bolts (for St. Andrew's crosses and road-sustaining plates) at 14cts. per pound	210 00
For 25 men two months, at $25 per month, shipping remaining castings, and putting up superstructure	1,250 00
For 300 perches of Macadam metal, at $1	300 00
For completing centering	200 00
For covering castings with a coat of distilled tar, and painting outside castings	250 00
For grading the road on each side of the bridge, and for additional filling that will be required on account of the filling settling during the winter	200 00
For services of agent two months, at $125	250 00
For postage, stationary, and office rent,	50 00
For hauling the castings from foundry to site of work	75 00
For blocks and falls for erecting the iron castings	50 00
For small items that cannot be foreseen, say	711 41
	$7,000 00

RICHARD DELAFIELD,
Captain of Engineers.

PHILADELPHIA, *November* 14, 1837.

R.

CUMBERLAND ROAD OFFICE,
Springfield, Ohio, October 30, 1837.

To Brig. Gen. CHARLES GRATIOT,
Chief Engineer, Washington, D. C.

SIR: Since the date of my last annual report, the operations on the Cumberland road in Ohio have been steadily continued, with a partial suspension, occasioned by the intervention of the last winter, which rendered it necessary to discontinue all operations upon the road, except the preparation of metal for covering, which has continued without interruption throughout the year.

After the passage of the act of 3d March last, appropriating $190,000 for continuing the construction of this road, it was determined to apply as much of the available means to the completion of the road from Columbus to Springfield, a distance of 43 miles, as could be done consistently with the general interests of the work; and the balance to the extension of the road to the west of Springfield. The operations in the latter direction could not, however, be carried to the extent desired, and as recommended in my report of last year, in consequence of the sum appropriated having been less than two thirds of the amount required for the service of this year.

The present season has proved very favorable in this part of the State for road operations, and, therefore, a large amount of work has been executed during the year; the bulk of which, as also of the expenditures, has been applied to the Mac-

adamizing and completion of the division of road comprised between Columbus and Springfield; a small portion only of the funds available for the year remaining unpledged or unexpended on the 30th September of this year.

The subdivision of 14 miles west from Columbus to the town of Jefferson, was completed during the winter, and received by the Executive of the State on the 25th of March last. The preparation of all the metal required for nine miles, in continuation to the 23d mile, was completed in May, and six inches laid on the same on the 10th June; the remaining three inches being prepared, and in readiness to lay thereon, as soon as the former shall have been sufficiently packed to receive it, which has not yet taken place in consequence of the travel, during the dry weather of the past season, having preferred the by-roads in preference to passing over metal newly laid: this object will, however, soon be effected by the approaching wet weather.

In the months of May and June last, contracts were entered into for the completion, with nine inches of metal, of the eleven miles immediately east of Springfield, viz: from the 33d to the 43d mile, inclusive; also, for the grading of three miles, from the 30th to the 32d, inclusive; and for completing the delivery on the road, for 8 miles, from the 25th to the 32d, of six inches of prepared metal, and of nine inches for the 24th mile. All these contracts are in a state of forwardness, and give promise of a satisfactory completion. The laying of six inches of metal, from the 32d to the 43d mile-stone, in the town of Springfield, was completed in September, and all the grading required between Columbus and Springfield will be completed on the 1st of November.

The wooden superstructure of a bridge of 87 feet span across Deer creek, on the 22d mile, was commenced early in the spring, and will be finished at the end of this month. All the masonry on the above division has been completed, and the stone bridges furnished with parapets of cut limestone from the quarries at Springfield.

After the successful fulfilment of the contracts now in progress, and the expenditure of the present appropriation, there will remain, to complete the road from Columbus to Springfield, the preparation of the last stratum of 3 inches, or 8,560 perches of metal for the 8 miles from the 25th to the 32d, and the laying of 3 inches, already prepared, upon the 9 miles from the 15th to the 23d, and of 9 inches from thence to the 32d mile—in all, estimated to cost $30,455; after which, this division may be surrendered entire to the State during the next summer.

To the west of Springfield, the operations have this season been extended to the Miami river, 61 miles west of Columbus. A contract was entered into, in the month of August, for grubbing 7 miles, from the 55th to the 61st mile, inclusive, to be completed during the ensuing winter.

The abutments of two bridges, in the valley of Mad river, of 80 and 150 feet span, respectively, across Buck creek and Mad river, were commenced in June, and are now nearly completed. The foundation of the eastern abutment of the latter bridge was sunk 10 feet below the surface of the stream, and founded, as well as the western abutment, upon solid limestone rock. The bridge across Buck creek was found necessary to afford sufficient vent for the water during the highest freshets, which here spread entirely across the bottom in which the two streams are situated. This part of the work, as well as the quarrying of the material, has been executed by hired workmen. To aid in opening for and raising these works, a small body of laborers were kept up during the summer, who, when not occupied upon the bridges, were employed in executing the light grading of the 44th mile, or first west of Springfield. The stone of which these abutments are constructed, with the exception of a small quantity purchased, was obtained from a quarry on the east side of Mad river, at one fourth and one half mile from the site of the bridges, which affords a superior quality of building limestone.

During the year ending on the 30th September, 1837, there has been prepared

for the cover of the division of a road from Columbus to Springfield 68,550 perches of metal; and the quantity laid upon the road, in the same time, amounted to 62,617 perches.

The grading of 7 miles, on the above division, comprising all to be done thereon, will be finished at the expiration of the present month of October.

The superstructure of the bridge across Little Darby creek was put in good repair previous to surrendering to the State the section of road upon which it lies; new arches and additional bracing were supplied, and the bridges reshingled and repainted: these repairs costing the sum of $1,165.

The wooden superstructure of a bridge of 87 feet span, as before stated, has been built this season across Deer creek, on the 22d mile. The principal part of the frame-work of this bridge has been constructed of oak, selected with care from the neighboring timbered land; the weather covering of the bridge, and some portion of the bracing, of poplar, brought from Mad river, a distance of 24 miles.

Of the masonry, 370 perches of cut stone have been laid in wings and parapet walls of stone bridges, in completion of all the work of this description to be done on the above division. On the division west of Springfield, 1,312 perches of masonry have been laid in abutments of bridges across Mad river and Buck creek, and in culverts on the 44th mile.

Several miles of the grubbing contracted for have been partially finished, and the satisfactory completion of the whole in due time expected.

The material used for Macadamizing the road from the 15th to the 40th mile, inclusive, for the distance of 24 miles, (excluding the 20th and 21st miles, supplied with quarry stone from Little Darby creek,) has been taken from gravel banks in the vicinity of the road, bordering the valleys of creeks, which, in respect to these miles, have a general direction nearly parallel to the road. These banks afford limestone of the hardest kind, which, when well separated from earth and the finer particles of gravel, by screens of proper construction, and broken to the required size, is found, although requiring a longer time to consolidate, to offer a wearing surface equal, if not superior, to the quarry stone obtained.

The material for covering several miles adjacent to the town of Springfield, has been taken from quarries on Buck creek and Mad river, which afford a hard and compact species of limestone, possessing the requisite qualities for forming a good covering for the road.

After the work shall have been completed in a permanent manner, and in case of the exhaustion of the gravel material along the line of the above division, the repairs may be supplied from the quarries on the Sciota, the Darby's, and the nearly inexhaustible sources of gravel on the latter, and from the quarries in the neighborhood of Springfield, on the west of this division, which will supply any requisite quantity of material for the purposes of repair. After the completion and general use of this thoroughfare, the needful repairs may be made on very reasonable terms, by contract or otherwise, and fully, it is confidently believed, within the competency of the tolls to meet.

By a proper regulation of the travel, and the encouragement, by the rate of tolls or legal enactment, of the use of wheels of wide bearing upon vehicles transporting heavy loads, the extent and cost of the repairs may be diminished in a very material ratio. The disadvantages arising from the scarcity of suitable material upon the Columbus and Springfield division will not be experienced to the same extent in the further progress of the operations to the westward of the latter place, as the materials of stone, gravel, and lumber, are found to exist in far greater abundance on that division of the road.

The expenditures during the year ending September 30, 1837, as shown by the tabular statements forwarded, amount to $234,836 89.

Of this, there have been applied towards the completion of the road from Columbus to Springfield, - - - - - $222,513 64

To the division lying west of Springfield,		$12,013 33
Arrearages east of Columbus,		309 92
		234,836 89
The available means, during the year, have amounted to		297,596 18
Leaving unexpended on the 30th September, 1837,		62,759 29
Of the latter amount there was pledged, at the same date, to meet the fulfilment of certain contracts,		58,641 61
Leaving for application on the 30th September, 1837,		4,117 68

all of which will be applied during the fourth quarter of the current year.

For the ensuing year, the grading and bridging west of Springfield will constitute the principal items of expense, it being proposed to finish the road between this place and Columbus; the whole of which may be surrendered to the State of Ohio early in the ensuing summer, should the funds required be furnished early in the season.

To grade the road to the Western bluff, on the Miami river, and erect the requisite bridges on that subdivision, or make the necessary arrangements for their construction by contract or otherwise, and to complete the clearing and grubbing of the line through to the State of Indiana—the following being the estimated amount required for the above objects:

For preparing 8,560 perches of metal, at $2 17,		$18,575
Laying 3 inches for 9 miles, and 9 inches for the same distance,		11,880
		30,455
To complete the road from Columbus to Springfield,		17,200
Grubbing to the Indiana State line, 35.7 miles,		45,460
Masonry to west side of the Miami river,		41,360
Wooden superstructure of bridges, 752 feet,		102,560
Grading to the west side of the Miami river, 20 miles,		6,165
Contingencies,		
Amount required for the year 1838,		$243,200

Respectfully submitted.

G. DUTTON,
Lt. U. S. Engs.

S.

Memoir accompanying the annual report of operations, and the annual statements exhibiting the estimates, appropriations and expenditures, on the Cumberland road, in the States of Indiana and Illinois, for the year ending 30th of September, 1837.

CUMBERLAND ROAD OFFICE,
Terre Haute, Indiana, October 19, 1837.

Gen. C. GRATIOT,
Chief Engineer, Washington.

SIR: I have the honor to submit the annual reports of the operations on the Cumberland road in the States of Indiana and Illinois, for the year ending 30th of September, 1837: also, the annual statements, exhibiting the estimates, appropriations, and expenditures, on account of the same works, to the same period of time.

CUMBERLAND ROAD, INDIANA.

The law of Congress of 1836, making appropriations for the continuation of

this work, restricted the operations to a continuous portion of the road. In consequence of this provision of the law, the operations, with the exception of some slight measures which were deemed essential to the preservation of the road, were confined to that part of it situated between the Illinois State line and twenty miles east of Terre Haute. During the months of October and November, 1836, and since the date of the last annual report, the operations on this portion of the road consisted of

Grading, at different points along the line;

Quarrying and hauling stone, for bridges, culverts, and Macadamizing;

Masonry; cutting stone and laying it in bridges and culverts, and smithery for the same;

Carpentry; getting out timber for superstructure of bridges, for scows or stone-flats for Wabash bridge, and for wooden railway leading from one of the Wabash bridge quarries to the Wabash river; constructing tools, implements, &c.

During this period, the operations in the above branches were pushed forward with all possible despatch; but, owing to the excessive rains of the season, they were greatly disturbed and retarded. The new grade was cut into ruts and gullies, and partly washed away. The roads leading to the different quarries were rendered almost impracticable for wagons. The pits, sunk to receive the foundations of culverts and bridge abutments, were filled with water; and, in some cases, the sites for the structures were entirely overflowed. Exertions were made to lay the masonry of Clear creek bridge: the pits were opened for the foundations of the abutments; but they were soon overflooded by a rise of the creek, and were filled with sand and rubbish. As soon as the water had subsided, they were reopened, only to be overflooded and filled again. The workmen were thus driven from the work three successive times, and were finally compelled to abandon it, leaving only one of the foundations secure.

About the 1st of December all operations were discontinued, except those of carpentry, and cutting and quarrying stone: the number of quarrymen employed being sufficient only to furnish the cutters with stone. These operations were carried on during the winter at reduced wages: the prices paid being so regulated as to form an equivalent for the services rendered during the short days of this inclement season.

In March last, information was received of the early and timely appropriation made for the continuation of this work. The act of Congress making this appropriation annulled the clause of the previous session, which had restricted the operations to a continuous portion of the road, but it provided for a change in the mode of conducting the operations. The method previously pursued, of carrying on the work by hired labor, was to be abandoned, and the contract system, so far as was deemed practicable, was to be introduced.

Shortly after the receipt of this information, the necessary steps were taken preparatory to a resumption of operations by hired labor, upon such of the works as had, during the previous season, been brought near to a state of completion, and upon such others as could not, owing to some peculiarity of their nature, be judiciously put out to contract. The few works, upon which operations were thus resumed, were mostly commenced early in the month of April.

Knowing that it would be impossible for him to make disbursements at more points than one, having no assistants for this purpose, and being informed that no details would be made from the army, the superintendent saw that, anxious as he was to commence operations upon a more extended scale, it would be impossible for him to do so, unless some arrangement could be entered into by which the disbursements could be made. With a view to enlist the services of the banks in the matter, propositions were, at an early day, submitted to the different branches along the line of the road. Some of these institutions were loath to accede to

the propositions, and for a long time declined doing so, until finally, the citizens of their vicinity came forward, and offered to remunerate them for any services they might perform, and to indemnify them for any expenses they might incur by the undertaking. The bank at Richmond was an exception. It acceded at once to the propositions, and arrangements were immediately made for starting a party of engineers to that point of the road. A day was appointed for the stage to make its first trip for the season. Seats were engaged; but the road was deemed impracticable; and being thus twice disappointed, a private conveyance was at length obtained, and on the 11th of April a party of engineers, with their instruments, set out for Richmond. The engineers were followed by the superintendent in this, as well as in their other movements of the season. The necessary surveys, drawings, estimates, and specifications, having been made, seven sections were put under contract in the month of May and in the early part of June. These works were left under the charge of an assistant engineer, who was directed to prepare for letting out to contract five additional sections, which has since been done. The contracts at this point provide for the grading, draining, and bridging of more than eight and a half miles of the road, commencing within one mile of the Ohio State line, and proceeding west, through the towns of Richmond and Centreville. The sections leading through these towns are to be graded, paved, and covered with broken stone; and the contracts were taken, by the respective town corporations, at the engineer's estimate.

Early in the month of June, the main party of engineers proceeded to Indianapolis, where, on the 19th and 26th of that month, ten sections of the road were put under contract. One of the sections let on the 19th was declined by the contractor, and was relet on the 26th. The contracts, at this point, provide for the entire completion of about five miles of the road, leading through the town of Indianapolis, and extending about one mile east and three miles west. With a view of expediting the work as much as possible, and in order to ensure the laying on of two coats of metal during the season, one set of contracts was entered into, providing for the repairs of bridges, for grading and draining the road, and for laying on the metal; while another and different set of contracts provided for the timely delivery of the Macadamizing materials.

Upon leaving Indianapolis, the party of engineers was divided. Some of them were engaged in making preparations for putting out contracts on the road, in the western part of Indiana and in the eastern part of Illinois; while the others, followed by the superintendent, proceeded to Vandalia, Illinois, and, about the first of July, joined an assistant engineer, who had been making preparations at that point during the preceding part of the season. The history of operations in Illinois will be given as we proceed.

After returning from Vandalia, six sections of the road were put under contract at Terre Haute, on the 2d and 6th of September. These contracts provided for the grading, draining, and bridging of a portion of the road, commencing about three miles east of Terre Haute, (to which point the grading, draining, and bridging was mostly completed,) and proceeding about three and a half miles to the east. Among the other things provided for by these contracts, was the construction of bridges of 60 feet span, over Middle and East Lost creeks.

In the latter part of June, a contract was entered into, providing for the delivery of eight thousand perches of building stone upon the bank of the Wabash river, at a point about 15 miles below Terre Haute. This stone is intended for the Wabash bridge, and will be towed to Terre Haute by a steamboat constructed for the purpose. The estimated cost of delivering this stone was $22,916 40

The cost by contract is 31,250 00

Excess of contract over estimate, $8,333 60

Below is given the number of contracts entered into along the *line* of the road, as well as some of the more prominent works for which they provide.

	Near Richmond.	Near Indianapolis.	Near Terre Haute.
No. of sections under contract, -	12	10	6
" bridges to be built, -	3	1	2
" culverts " " -	10	3	2
" miles to be graded, about	8¾	5	3½
" " " Macadamized: about	1	5	
To which should be added repairs of bridges and culverts, keeping road in repair, &c.			
Estimated cost of the above works,	$61,202 36	44,947 19	23,715 98
Cost by contract " " -	71,040 39	73,854 67	23,715 98
Excess of contracts over estimates,	$9,838 03	28,907 48	

It will thus be seen that the contracts in the vicinity of Terre Haute were taken at the engineer's estimate; that those at Richmond were taken at an advance upon the estimate of less than 20 per cent.; while those at Indianapolis were taken at an advance upon the estimate of more than 60 per cent. When the contracts at Indianapolis were taken at these high, not to say extravagant rates, it was certainly nothing more than reasonable to suppose that the contractors would push forward and complete their contracts. But these reasonable expectations have in some cases been disappointed; and this is the only point in the State at which the contractors have willingly relinquished and abandoned their contracts; and the reasons assigned for doing so, are, that the work cannot be done for the contract prices. Three contracts have been abandoned, and these provided for grading and Macadamizing the section leading through the town of Indianapolis, and those immediately east and west of it. One of these was relinquished in July, and the other two were relinquished on the 1st of August. The lateness of the period at which these contracts were relinquished made it impossible to relet them, and to have more than one stratum of metal put on the road during the season. This single stratum, if put on, would have been ground down and buried in the earth long before spring. To have expended money for an object like this, would have been to have thrown it away, rather than to have expended it wisely and judiciously.

The operations of grading, Macadamizing, &c., on the other two sections, as well as the operations for delivering metal on all the sections, at this point, are progressing rapidly, and there is every reason to hope that the works will be completed according to the stipulations of the contracts.

Up to the 30th of September, the date to which this report extends, the season had been unusually favorable to the operations on the road, and the contractors in the vicinity of Richmond and Terre Haute had made such progress upon several works as to induce the belief that they would have them complet accordance with the requirements of their respective contracts.

For a more particular description of the contracts entered into during on, and for a more minute detail of the works for which they provid respectfully refer you to a tabular statement of contracts, enclosed an herewith.

Result of the operations.—Work done by contract.

	Near Richmond.	Near Indianapolis.	Near Terre Haute.
No. perches of stone laid in bridges,	229		
" " " " in culverts,	49		5,143
" yds. of excavation,	25,115	-	5,143
" " made into embankment,	25,341	-	
" rods of grading finished,	167	1,124	
" perches of metalling delivered,	-	8,167	
" " " broken about,	200	850	
" " " laid on,	70	133	
" rods	165		
" " paved,			

With a view of enabling the superintendent to collect, in due time, the information necessary to the making out of his annual reports, the estimates of work done were made on the 20th instead of the 30th of September, at which time the sections in the vicinity of Terre Haute had been under contract but a few days.

Work done by hired labor.

No. perches of stone laid in bridges,	-	-	-	583
" " " " in culverts,	-	-	-	368
" " " quarried,	-	-	-	6,397
" yds. of excavation,	-	-	-	32,924
" " made into embankment,	-	-	-	43,012
" culverts completed near Richmond,	-	-	-	5
" " " " Terre Haute,	-	-	-	7

The masonry of the abutments of West Lost creek bridge has been finished, with the exception of a few days' work on the parapets. This is a bridge of 100 feet span. The superstructure has been framed and is now in process of being raised and put together.

The masonry of the abutments of Clear creek bridge has been nearly completed, and the framing of the superstructure will be commenced in a few days.

One stone quarry has been kept in constant operation during the past season. The building stone obtained from it is intended for the Wabash bridge, and the smaller fragments will be broken and used for Macadamizing the road. A wooden way, three quarters of a mile in length, has been laid from this quarry to a point he Wabash river, about seven miles below Terre Haute. A stone-breaking e, propelled by steam power, has been set up at this point, and will, in a few into constant operation. The prepared metal and building stone delivered nt will be towed up the river to Terre Haute. A steamboat of shallow been constructed for the purpose of collecting materials for the dge, and is now at Terre Haute, ready to commence operations. Th e-boats have also been constructed during the past season. The scows will, for a time, be principally engaged in towing stone fro the river—the one about 7 and the other about 15 miles belo The stone to be delivered at the lower point will be furnished b contractor has found it necessary, before commencing the deli oden railway about 4½ miles in length, which is now near

Present condition of the work.

With the exception of a few stumps, that may occasionally be found along its sides, the road may be said to be cleared and grubbed throughout its whole extent in the State.

The grading of about two thirds of the road has been considered as finished. But a considerable portion of it, done in the earlier stages of the work, under its former superintendents, was not raised to a sufficient height above the level of the adjacent ground. The side ditches were always too narrow: the water might, perhaps, be collected into them from the surface of the road, but they were not so constructed as to drain it off, unless the natural features of the ground happened to produce such a result without the assistance of labor and art. The soil, too, of large sections of the country through which the road passes is of a loose and porous nature, absorbs the water readily, and is liable to become exceedingly muddy. These causes, together with the immense amount of travel which has cut the road in pieces, and the heavy rains which have been washing it away, have brought it into an almost ruinous condition; so much so, that to put it in order for receiving the metal, will require an amount equal, perhaps, to one fourth the cost of the original grade.

A large number of culverts have been constructed on the road in this State; but a majority of those constructed in the earlier stages of the work were built of sandstone, which, on being exposed, has disintegrated; and they are now tumbling to pieces, and must be rebuilt. Many of the bridges, too, are composed of bad materials, and must be rebuilt. There are others which are composed of good materials, but which, owing to some fault in the design or execution of the work, must be repaired or rebuilt. A fault common to the bridges on this road, is, that their wooden superstructures do not project sufficiently far over the abutments to shelter the timbers which rest upon the abutments from the action of the weather. These timbers, by becoming frequently wet, are liable to rapid decay, and thus endanger the whole structure.

Most of the streams, of any importance, on the eastern division of the road, embracing that part of it between the Ohio State line and Indianapolis, have been furnished with bridges, which, at the time of their construction, were intended to be of a permanent character; while, in most cases, the smaller streams and ravines have been furnished with bridges of a temporary character.

The same remarks, with a few exceptions, will apply to the western division of the road, embracing that part of it between Indianapolis and the Illinois State line. On this division, Dewees's, Croy's, and Otter creeks have not been furnished with bridges of a permanent character; nor have bridges of any description been built over Deer creek and the Walnut fork of Eel river. These latter streams, in times of high water, offer serious impediments to the travel on the road. But by far the greatest obstruction on the whole road is the Wabash river, and the low bottoms on its western side; these, at times of high water, or when ice is floating in the stream, form an absolute barrier to all communication whatever.

Although these streams at certain periods offer serious and almost insurmountable obstacles to the travel on the road, yet at ordinary times they can scarcely be said to impede it at all. The creeks are easily forded, and the Wabash may be ferried without difficulty. And although the road, during the thaws of the spring and at seasons of heavy rains, is liable to become exceedingly muddy and almost impassable, yet, during the greater portion of the year, it is a smooth, firm, and delightful highway. Emigrants, travellers, and others, give it a preference over all the other western routes. The travel on it, though immense, is still increasing; and during the summer and fall months of the year, the tide of Western emigration rolls along this great national thoroughfare in a continued and unbroken stream.

Resources of the country adapted to the construction of roads.

Face of the country, soil, &c.—The face of the country bordering on the road from the Ohio State line to the west fork of White Water, a distance of about twenty miles, is undulating or rolling. From this point to Indianapolis, a distance of fifty-two miles, the face of the country is generally level, and consists principally of "beech flats," which, in their wild and uncultivated state, are wet and marshy. The face of the country would, perhaps, be better described by saying that the undulating grounds are occasionally found along the whole line of the road, from the Ohio State line to Indianapolis; and that they constitute about one half of the whole distance, while the remaining portion of the country is extremely level, and consists of "beech flats."

The undulating grounds are composed of a succession of hills and valleys. They are covered with a growth of black walnut, sugar tree, poplar, and white oak. The soil, which is very productive, is a rich loam, mixed with sand and clay. When dry, it is quite firm; but when wet, it becomes very muddy.

The "beech flats" may be divided into two classes, the higher and lower; and are found, on this division of the road, in nearly equal proportions, and constituting about one fourth of the whole distance.

The soil of the "higher beech flats" is generally a white, dense, and tenacious clay. When cleared and cultivated, it becomes dry, and produces tolerably well; but is better adapted to the purposes of grazing. When thrown up, it consolidates, becomes dry and firm, and is not easily penetrated by water.

The soil of the "lower beech flats" is dark, rich, and loose; and is composed principally of clay and decayed vegetable matter. When thrown up and well dried, it is tolerably firm; but, being light and porous, it is easily penetrated by water, which destroys all its tenacity, and renders it extremely muddy. These "lower beech flats" are also known by the names of "black swamps" and "black slashes."

On the western division of the road, extending from Indianapolis to the Illinois State line, and comprising a distance of about seventy-six miles, the undulating grounds largely predomiminate; and the "beech flats" and "slashes" are no longer found.

For a distance of thirty miles west of Indianapolis, the country is generally rich and level. The growth is sugar tree, black walnut, poplar, white oak, and beech. The soil is well adapted to cultivation, but is liable to become wet and extremely muddy.

From this point to the Illinois line, the country is generally undulating, and is better adapted to the purposes of road-making than any other large portion of the State through which the road passes. The growth is white oak, beech, and poplar. The soil, when cultivated, is tolerably productive, and is well adapted to the purposes of grazing. When thrown up, it consolidates, and makes a smooth, firm, and delightful road.

The country bordering on the Wabash river is mostly composed of level prairie lands, which are exceedingly fertile.

In embracing such extensive districts of country, and giving their general characteristics, there are, of course, many traits and peculiarities belonging to the minor divisions which must be passed over and left unnoticed.

Materials, &c.

By making judicious selections, timber of good quality can be conveniently procured for all the purposes of this road.

Sandstone, which was freely used in the earlier constructions of this work, having ...d to be a defective and unsafe material, the use of it has been entirely exclu... the road.

...hio State line to the west fork of White Water, a distance of abou... ...e may be obtained in great abundance for the uses of the road

The stone here found is a good secondary limestone; but as the strata in which it occurs are generally very thin, it is not well adapted to building purposes.

From this point to Indianapolis, good limestone will be procured with considerable difficulty and expense. The average distance to which it must be hauled will probably not be less than twelve miles. This difficulty will, however, be partially obviated by the frequent occurrence of a species of stone, usually denominated "boulder's." These occur in detached spherical masses of various sizes, sometimes upon the surface, and sometimes imbedded in the earth. They are a species of granite, are very hard, will answer well for Macadamizing, but cannot be used for building.

At no point on the road, perhaps, would it be more difficult to procure a supply of good limestone, than at Indianapolis. Good building stone cannot, it is believed, be procured nearer than the Putnamville quarries, a distance of about 30 miles. The Macadamizing materials, now delivering in that vicinity, are boulders and pebbles. The pebbles are principally obtained from the beds of White river and Eagle creek. The same character of materials must be used in Macadamizing the road for a considerable distance east and west of that point.

After reaching Belleville, eighteen miles west of Indianapolis, limestone suitable for Macadamizing can be obtained. And as we proceed still further west, we approach the fine quarries of Putnam county, where limestone is found immediately on the line of the road, of a very superior quality, and in almost inexhaustible quantities. From thence on to the Illinois line, limestone can be procured, without any very considerable difficulty, for all the ordinary purposes of the road. A considerable quantity of very large stone being required for the construction of the Wabash bridge, it will be obtained at points near the river, and will be transported by water to the site of the bridge.

Stone in considerable quantities has already been delivered at different points along the line of the road.

For an account of the increase of population, and of the general growth and improvement of the country along the line of the road, I would respectfully refer you to a statistical table forwarded herewith.

Funds, estimates, &c.

By referring to annual statement No. 1, herewith sent, it will be seen that the amount due on contracts, on the 30th September, 1837, exceeded the amount of available funds, by 25,362 dollars. It is believed, however, that the materials which the contractors are bound to receive, and the tools which they will probably purchase from the road, together with the amount due on contracts which will probably be relinquished or forfeited prior to their completion, will amount to a sum equal to, if not greater, than this excess. As an evidence of the correctness of this opinion, it may be stated that the contract for section O, on the western division of the road, amounting to $8,637 27, has been forfeited by the contractor, and has been annulled by the superintendent, since the 30th of September.

In 1834, an estimate was made of the amount necessary to complete the road in this State; and in 1835, an estimate was made of the amount necessary to construct a bridge across the Wabash river. It will be perceived, from annual statement No. 2, that both these amounts have been increased by the estimates of the present year. This increase may be accounted for by the higher prices to be paid for tools, implements, and materials, used in construction, and by the great advance in the rates of labor since the dates of the original estimates. Another reason for increasing the estimate of 1834 is, that no estimate has heretofore been made for completing the mile extending through the town of Indianapolis. All measurements, reckonings, and estimates, heretofore made of the road, have commenced at the eastern and western extremities of Indianapolis, and have proceeded to the east and west; the mile extending through the town having been left entirely out of consideration.

Below is given a plan of operations, which it is proposed to adopt, for the continuation of the Cumberland road in Indiana, during the year 1838; and upon which is founded the estimate of the amount of funds required for its continuation during that year.

Near Richmond.

To Macadamize 8 miles of the road, the grading, draining, and bridging of which is now under contract, - -	$56,000	
To prepare 10 additional miles for the metallic cover, -	56,500	
		$112,500

Near Indianapolis.

To complete entirely 30 miles of the road: 15 miles on the east, and 15 miles on the west, of the points at which the present contracts terminate, - - - -	$225,000	
		$225,000

Near Terre Haute.

To Macadamize 8 miles of the road, the grading, &c., of which is either finished, or under contract, - - -	$52,000	
To prepare 8 additional miles for the metallic cover, -	40,000	
To construct bridge abutments in the bottom west of the Wabash river, - - - - - -	20,500	
		$112,500

Wabash bridge.

To collect and prepare materials for the construction of this bridge, - - - - - - -	$50,000	
		$50,000
Total amount required for 1838,		$500,000

The above amount of 500,000 dollars, it is respectfully recommended may be furnished at the earliest practicable period.

CUMBERLAND ROAD, ILLINOIS.

The operations on this work were, during the year 1836, confined principally to that portion of the road between the Indiana State line and a point thirty miles west of it. At a late period of the season, operations were commenced on the western division of the road, in the vicinity of Vandalia. But the officer having the immediate charge of this division of the road being ordered to join his regiment, the operations were discontinued soon after their commencement.

During the months of October and November, 1836, the operations on the road consisted of

Grading, at different points between the 6th and 30th, and between the 83d and 90th miles of the road, reckoning from the Indiana State line.

Quarrying and hauling stone, for bridges and culverts on the eastern division of the road.

Masonry; cutting stone for bridges and culverts, and laying stone in culverts on the eastern division of the road.

Carpentry; repairing and securing wooden superstructures of bridges; constructing tools, implements, &c., for the use of the road.

The weather being very unfavorable to the operations, at that season of the year, but little could be done. Some portions of the grade were finished; but the greater part of it was left, at the close of operations, in an unfinished state.

About the 1st of December all operations were discontinued, except those of carpentry, which were quite limited, and those of cutting and quarrying stone; the number of quarrymen employed being sufficient only to furnish the cutters

with stone. These operations were carried on during the winter at reduced wages.

Shortly after the receipt of the information that an additional sum had been appropriated for the continuation of this work, and that a change was to be introduced in the method of conducting the operations, preparations were made for the speedy resumption of operations, upon several of the works of masonry, on the eastern division of the road. The reasons for commencing these operations, and for continuing them, upon several of the works, until within a short time of the first letting of contracts, were to retain upon the works those laborers and mechanics whose places, if they left, could not be supplied—to finish such of the works as were liable to be injured by remaining in their then condition, and to insure the hasty completion of such others as were necessary to be finished before the operations of grading, by contract, could be commenced in their vicinity.

After the passage of the law making so radical a change in the method of conducting the operations, an entirely new survey and estimate of those portions of the road, intended to be put under contract, became necessary. An assistant engineer was despatched to Vandalia, early in the spring, to make these preparations; but his health being ill, and it being impossible to furnish him with any aid until after the lettings in Indiana had taken place at Richmond and Indianapolis, the operations at this point were necessarily delayed until late in the season. He was joined at Vandalia by others of the party, about the first of July, and on the 20th of that month the first lettings for Illinois took place. The last sections put under contract at Vandalia were let out on the 12th of August. During the season ten sections have been put under contract at Vandalia, amounting to the sum of 93,765 dollars and 91 cents. These contracts provide for the completion of the grading, draining, and masonry, from the 81st mile of the road to the termination of its location at Vandalia. They embrace a distance of nine miles, and include, among other works, the bridge over the Kaskaskia river, the difficult embankment and large bridges in its bottom, and the smaller bridges over east and west Sand creeks.

After leaving Vandalia, preparations were continued for letting out contracts on the eastern division of the road, and accordingly eleven sections were put under contract at Marshall between the 31st of August and the 25th of September. These contracts comprise all the bridges, the heavy excavations and embankment, and the larger culverts, from the State line to the end of the 12th mile. Within this distance there are a few old culverts, which must finally be rebuilt; but being as yet in tolerable condition, they were not included in the contracts. Some portions of the old grade were, for the same reasons, not included. The foundations of the old bridges were so insecure, their abutments were generally composed of such worthless materials, and all of them so wretchedly constructed, that it was found necessary in every instance to rebuild them entirely, and to construct them of new materials. The wooden superstructures being generally in good condition, and their timbers sound, were permitted to remain. Provisions were made in the contracts, however, for repairing them thoroughly, and for remedying the defects in their construction, by inserting arches, and adding overjets, when necessary.

Owing to the scarcity of laborers, the difficulty of procuring mechanics, the great distance to which stone in many instances must be hauled, and also to guard against the delay which wet seasons and high waters would occasion, the period fixed for the completion of some of the more important contracts has been made to extend to the 1st of July, 1839. Three contracts on the eastern and one on the western division of the road are to be completed on or before the 31st of December next.

During the present season, 21 sections of the road in Illinois have been put under contract. These contracts provide for the construction of 10 bridges, of

spans varying from 20 to 300 feet, and requiring 6,765 perches of stone for their completion; 20 culverts, to contain, when finished, 1,086 perches of stone, 285,162 cubic yards earth, to be made into embankment, and about an equal quantity of earth is to be excavated; add draining, paving, sodding, repairing, &c.

Estimated cost of above works - - -	$186,332 08
Cost by contract - - - - -	213,875 79
Excess of contracts over estimates - - -	$27,543 71

It will thus be seen that the contracts in this State have been taken at an advance upon the estimate, of less than 15 per cent.

For further particulars in relation to the contracts, I would respectfully refer you to a statement of those entered into during the season, which is enclosed and forwarded herewith.

Result of the operations.—Work done by hired labor.

No. yards of excavation . . .	18,592
" " made into embankment . . .	28,297
No. perches of stone quarried . . .	5,256
" " " delivered at sites of different works .	2,470
" " " laid in masonry . .	947
" feet " cut . . .	9,185

The grading was done previous to the passage of the law directing a change in the method of conducting the operations.

The large arch culvert on the 8th, and a Gothic culvert on the 9th mile, have been executed in a manner combining every requisite of neatness and durability. The masonry of the arch culverts on the 5th and 11th miles, and of a Gothic culvert on the 10th mile, was so far progressed with as to ensure their completion by the 15th of October. The stone quarried and delivered for the other works on the eastern division of the road, which have since been put under contract, amounts to about three fourths of the quantity necessary for their construc tion. A considerable quantity of this stone has also been cut, and is now ready for laying in masonry. The wooden superstructures of several bridges, whose abutments were likely to tumble down, have been secured by trestles, in such a manner that the old abutments may be torn away and others built in their places

Work done by contract.

The operations under the contract system, not having fairly commenced at the date of the last estimate (20th Sept.) they can scarcely be said to have resulted in any thing that may be imbodied in a report. 115 perches of stone had been delivered; 830 feet of stone had been cut, and 12,350 cubic yards of earth had been excavated and made into embankment. Since that time, however, the number of laborers and mechanics employed has been more than doubled, and the works are now progressing with great rapidity. And should the season continue to prove favorable, the foundations of several of the largest bridges will be laid, a large amount of materials will be collected, and such other progress will be made as will enable the contractors to finish their sections some months before the stipulated time.

Present condition of the work.

The road, to the termination of its location at Vandalia, has been opened throughout its whole extent.

During the earlier stages of the work, the grading was principally confined to the more level parts of the timbered land. Several miles of the grade were thrown up at different intervals, and were considered as finished. The grading of a more recent date has been confined chiefly to the heavy cuts and fills which, on the eastern division of the road particularly, are very numerous.

Those portions of the grade which have been finished, make a firm, smooth, and delightful road. The subsoil consists of a grayish clay, with a considerable admixture of sand. When thrown up, it consolidates quickly, becomes wet with little rain, dries rapidly without cracking, and again becomes smooth with little travel. Where it is necessary to make cuts in the hills, the clay is of a much more tenacious kind, is mixed with small gravel, and is difficult to excavate. Through the prairie lands little grading has been done. During the greater portion of the year, the road may be travelled with comparative ease; but during the thaws of the spring, and the seasons of heavy rains, it cannot be passed without great fatigue and difficulty.

Bridges, either of a temporary or permanent character, have been constructed over nearly all the streams of any importance in this State. All the masonry, however, which was constructed in the earlier progress of the work, has been condemned, as perishable and insufficient. Not a perch of it, constructed prior to the year 1834, is in a condition to be turned over to the State. Every bridge, without exception, and almost every culvert, will require to be reconstructed of entirely new materials; the cost of the new works being enhanced by the labor of removing the rubbish of the old.

The wooden superstructures having been secured in their positions by trestles, are still accessible to the travel. And the facilities which are thus afforded, together with the improvements which have been made by grading, either partially or entirely, some of the more difficult portions of the road, have given this route, during a considerable portion of the year, a preference over all others in its vicinity; and it is now daily thronged with persons emigrating to the interior of this State, to Missouri, and other portions of the West.

Resources of the country for the construction of roads.—Face of the country, soil, etc.

The section of Illinois through which the road passes is generally less fertile, and less productive than any other portion of the State.

Commencing at the State line, and proceeding along the line of the road, for a tance of near 30 miles, the country is broken and interspersed with numerous small streams. The growth is white, black, red, and post oak, and poplar. The soil is a grayish, or rather a whitish clay, mixed with sand in different proportions. When thrown up into embankment, it consolidates, and becomes firm and smooth.

On the remaining portion of the road, the face of the country, broken and hilly on the streams, becomes more undulating as we recede from them, until finally we emerge into the open, flat, and generally wet prairies.

The width of these prairies varies in proportion to the distance between the water courses, from one to fifteen miles.

The growth of the country bordering on the streams is white, burr, red, and post oak, hickory, and ash. The same character of soil (the grayish or whitish clay, mixed with sand) extends generally throughout the whole line of the road; and when thrown up, and protected from washing, will make a firm, compact, and smooth road, except during the thaws and heavy rains of the spring. These remarks, however, do not apply to those sections of the road extending through the river bottoms, nor to those extending through the cuts of the hills; these portions of the road can never be made good, without a metallic cover.

When this road was first laid out, it may be said to have been located through an almost uninhabited region. There were but few inhabitants in its vicinity, and only two settlements were found immediately on the line, throughout its whole extent. Since that time, many settlements and improvements have been made, but chiefly with a view to work on the road, or to accommodate the travel. Of the many towns projected along its line, but a small number have grown into any importance; and many of them do not seem destined to outlive their founders.

Materials, &c.

The timber used as a material on the road, being employed chiefly in the construction of bridges, can, it is believed, be found of suitable quality, along the streams, and near the sites of the works.

Poplar, and several species of the oak, are found on the eastern division of the road; but the poplar not being found west of the Little Wabash river, the oak must be relied upon entirely for those structures which are west of that stream.

The scarcity of good building stone, and the great distance to which, in many instances, it must be hauled, constitute one of the greatest difficulties to be overcome in the construction of this road. Except in the vicinity of Big and Little creeks, on the 7th mile, good building stone is no where found immediately on the line of the road.

From the State line to the 25th mile of the road, building stone, of an excellent quality, may be procured with comparatively little difficulty and expense; the distance to which it must be hauled varying from a few yards te about seven miles.

From the 25th to the 50th mile, the only stone found is a thin, shelly, bastard limestone. This occurs in considerable quantities; but owing to the heavy stripping of earth, the quarrying is expensive; and it must be hauled to distances varying from 3½ to 14 miles. This stone is found on the Embarras river and its tributaries.

From the 50th to the 60th mile, bastard limestone of an excellent quality is found, and is rather more conveniently situated to the road.

From the 60th to the 90th mile of the road, building stone is less abundant than on any other division in the State. The stone found is an excellent material, but the transportation, varying from 6 to 18 miles, will render the cost of the works exceedingly great.

Funds, estimates, &c.

It will be seen by annual statement No. 1, sent herewith, that the amount due on contracts on the 30th of September, 1837, exceeded the amount of available funds, by $8,053 71 cents. It is believed, however, that the materials which the contractors are to receive, and the tools, implements, &c., which they will probably purchase from the road, will amount to a sum equal to if not greater than this excess.

Below is given a plan of operations which it is proposed to adopt for the continuation of the Cumberland road in Illinois, during the year 1838, and upon which is based the estimate of the sum required for its continuation during that year.

Eastern division of the road.

To complete the road from the 12th, to Embarras river, on the 38th mile, (viz:) grading 26 miles of the road, constructing culverts on the same, constructing bridge of 80 feet span over west fork of Mill creek, and bridge of 100 feet span over north fork of Embarras river, and constructing several smaller bridges,	$150,000 00

Western division of the road.

To complete the road from the 81st to the 62d mile, inclusive, (viz:) grading 20 miles of road, constructing culverts on the same, constructing bridge of 150 feet span over Little Wabash river, and constructing several smaller bridges . . .	$150,000 00
Total sum required for 1838	300,000 00

The sections embraced in this plan of operations, together with the sections now under contract, comprise the whole extent of the road, with the exception of about 24 miles, 15 of which are prairie.

The above amount of 300,000 dollars, it is respectfully recommended, may be furnished at as early a date as practicable.

Remarks applicable to the road in both States.

It would be difficult to say at what period these works may be expected to be completed, since it will depend principally upon the sums appropriated for their continuance, and upon the seasonableness or unseasonableness of the times at which the appropriations are made. Should, however, the sums annually required, be furnished at an early period of each successive year, the works, with the exception perhaps of the Wabash bridge, may be completed in three years from this time.

The history of these works, since they came under the charge of their present superintendent, has been one of difficulty and embarrassment throughout; arising partly out of the nature of the previous alterations; the character and scarcity of labor, the small amounts and unseasonableness of the appropriations; the restrictions and changes in the method of conducting the operations; the difficulty of making disbursements; the magnitude and extent of the charge on the superintendent, and the shifting and unsettled character of the assistance allowed him.

Since 1834, an entire change has taken place in the character of the materials and workmanship employed in the construction of the road. Laborers and mechanics have been brought from a distance; and many (not among the least valuable of those in its employ) have learned their trades, and obtained a knowledge of their respective arts, whilst engaged in the construction of the road.

In the absence of other and necessary assistance, resort has been had to such aid as could be procured from the pursuits of civil life. But a sufficient number of skilful, competent, and efficient engineers being difficult to procure, some others have been employed and assigned to the more ordinary duties of the profession; a promotion in rank and an increase of wages being held out as an inducement to application and improvement.

The recent change introduced in the method of conducting the operations has occasioned a loss to the works of a great portion of the season. Before operations could be commenced by contract, surveys, calculations, estimates, drawings, specifications, &c., were necessary to be made. These preparations were commenced early in April, and between that time and the latter part of September, contracts were let out at Richmond, Indianapolis, Terre Haute, Marshall, and Vandalia, providing for operations at different points along the whole extent of the line, a distance of 240 miles.

Among the many difficulties which have beset this work, that of making the disbursements has not been the least. It is impossible for any individual, superintending a work of such extent as this, to attend to all his various duties, and personally to disburse money at different points so remote. No assistants having, of late, been detailed for this purpose, it became necessary, in order to extend and prosecute the works, that some arrangements should be made. As a last resort, propositions were submitted to the different banks along the line of the road. The only terms that could be offered were, that the banks should receive the money on deposite, make out the accounts, and pay off laborers, contractors, or others, without expense to the United States, or to the superintendent. Onerous as these conditions might appear, they were freely accepted by some of the banks; and were, in consequence of voluntary arrangements among the citizens, finally acceded to by all. These institutions are now making the disbursements for the road; but, by a single order of the directors, the arrangement could be destroyed, and difficulty and embarrassment would inevitably ensue. The speedy adoption of some measures by which the liability to such results may be removed, and by which the money may be disbursed with regularity and certainty, is earnestly but respectfully recommended.

Very respectfully, your obedient servant,

C. A. OGDEN, *Captain Corps Engineers.*

T.

MILITARY ACADEMY.—*Report of the Board of Visiters.*

TO THE SECRETARY OF WAR:

SIR: The Board of Visiters, who, in compliance with your request, have attended the examination of the United States Military Academy, discovered, in entering on the duties assigned them, that an extensive field of inquiry and observation was presented, deeply important, from the interesting results immediately involved, and the incidental responsibilities attaching to their commission, were induced, as a preliminary step, to ascertain the sources from which their ultimate decisions should be drawn. This was effected with great facility, and they feel a high gratification in acknowledging that every department of the institution was made tributary to the object—every means called for being furnished by the superintendent, and the very able and intelligent gentlemen who are at the head of the several departments.

As none of the members of the board had ever been present at any previous examination, it is not in their power to state the progress which may have been made in the improvement of the discipline, or the course of studies, of the cadets; nor to present a comparison between the actual and any preceding state of the Academy; but so far as they were enabled to judge from what passed under their notice, they are gratified in being able to state that the examination of the classes, generally, in their respective branches of study, were highly creditable, both to the institution and their pupils.

The first, or graduating class, was examined on the subjects of civil and military engineering, ethics, rhetoric, constitutional law, and artillery and infantry tactics, on each of which subjects the young gentlemen exhibited a proficiency highly honorable to the class in general, and gratifying to the board. The impression left by this examination on the minds of the board was, that these graduates would pass from the institution ably fitted to the discharge of the important duties of the various stations they may be called to occupy, whether in the public service of their country, or in those positions in civil life for which the education received at this institution more particularly qualifies them. And the board would further express a confident belief that the results growing out of this education will most fully reflect back on the country the enlarged benefits which are conferred on the pupils of this school.

The second class was examined in natural and experimental philosophy, chemistry, and landscape, and topographical drawing. The board would, in an especial manner, notice the highly creditable performances of this class, on each of these branches, as alike honorable to the attention and zeal of the instructers, and to the application of the pupils.

The third and fourth classes were examined on mathematics and French. The proficiency exhibited by the members of those classes was such as to give the most entire satisfaction to this board, who cannot close this very brief expression of their praise without congratulating the institution that the plan of the highly accomplished professors, who but lately occupied the chair of mathematics, should have been so ably filled, as the results of this examination fully prove that it is, by the talented young officer who now so advantageously presides in it.

In closing this very brief and general expression of the impressions left upon them by this review of the entire course of studies pursued at the institution, this board must permit themselves to offer a few observations. They regard this examination as a fair and unexceptionable test of the actual acquirements made by the cadets, so far as a public and limited examination on some of the branches of each course of study can be taken as a criterion of the proficiency of the pupil on the whole. The text books used by each class were placed before this board, and

they were invited to select the subject for examination for each cadet, and to put such questions during the examination as they might deem fit. This duty the board perfomed, and it is upon an examination conducted in chief by gentlemen,* who, from their official callings, habits, and pursuits, were especially qualified for such investigation, that the deliberate opinion here expressed is founded.

That all the members of each class should not have appeared with equal advantage when put to so fair a trial, is not ascribable to any cause known to the board, except to that diversity of physical capacity and talent which no education can soon cause to disappear. The professors are generally the same who conducted the studies of preceding classes—gentlemen entirely devoted to the best interests of the institution, and peculiarly fitted for the important duties they discharge. It is not the province of this board to eulogize the services and worth of public servants; but when to talents, rarely the gift to individuals, is combined an active zeal in the performance of laborious duties, involving the highest trusts, the Board will not repress an expression of the deep sense they entertain of their merits, nor hesitate to urge, with due respect, their claims upon your kind attention, so far as they can be made available in rendering their positions agreeable and pleasant to them.

The attention of the board was particularly directed to every point by which the physical comforts of the cadets were in any way affected. They accordingly made a thorough inspection of the barracks, hospital, commons, &c. &c., and found that every thing had been and was, done by the officers presiding over their respective departments, which could in any way contribute to the comfort and convenience of those under their care. Good order and neatness were observable throughout all these arrangements, with such checks instituted into the expenditure of the cadets as must completely secure them from any imposition, should any attempt of that character be ever made.

In examining into the wants of the institution, the board considered the improvements called for in the different branches of the institution, the discipline, the moral training, and the comforts of the cadets.

In the first of these, the board would respectfully call your attention to the inadequate number of officers allowed from the army to the institution, to perform the duties of assistant professors. This subject was most pertinently and strongly brought under the notice of the Secretary of War, in the able report made by the Board of Visiters of 1833. No amelioration, so far as this board can learn, grew out of that recommendation; nor have the various representations which, they understand, have been subsequently made by the academic staff, on the same point, met with more success. Most of the departments of the institution are at this moment laboring under the obstacles thus thrown in their way; and nothing but the most incessant and arduous labor, abridging accorded indulgences, and trenching on the means of health, has enabled several of the professors to carry forward their pupils under this state of things.

The board would not give a positive opinion on the claims of the institution upon the services of officers of the army who have been graduated from it; but it does strike them that there is some claim, perhaps a strong one, arising simply out of the relation of the graduate and his *alma mater*—and it does further appear that the young officer cannot be placed in a position more favorable to the advancement of his own qualifications, or be made more generally useful, than in imparting to others the acquirements he has made at this institution.

The board, in connexion with this subject, would bring under your notice the present position of the acting professor of chemistry. This able officer, with responsibilities and duties in nowise inferior to those of any of his colleagues, has neither the advantages presented by the permanent character, nor by the allow-

*President Adams and Wayland, with Professor Dod, were members of the board.

ances made them under their commissions. The board, therefore, suggest, that it would be not only an act of strict justice to have his chair placed on the same level with those of his colleagues, but that it would advance the best interests of the Academy to give him a stake in its concerns, which, though he now acts under its influence, certainly can arise out of nothing but a pure and highly commendable zeal for its cause.

The departments of engineering, natural philosophy, chemistry, drawing, and the library, are still in a very incomplete condition, owing to the want of sufficient models and books appertaining to these different branches, and to suitable accommodations and conveniences in the buildings of the institution for the purposes of the classes taught. The board, therefore, would, *in an especial manner*, recommend this subject also to your consideration; for they are fully satisfied that results can only be proportioned to the means placed at the disposal of the officer. If the latter are insufficient, it is exacting too much to expect that the former shall be of a favorable character. If much has been done without adequate means, it but seems more forcibly to illustrate the claims of the professor upon the attention of the Government, and is a virtual pledge of better future performances with increased means. From what the board have been able to learn, as set forth in the reports of their committees, but small yearly appropriations will be required to enable these departments to keep pace with the rest of the scientific world; and these, they feel a confident hope, will be granted by the country, when their obvious utility, indeed their *indispensable necessity*, are so fully shown.

With regard to the actual discipline of the school, and the moral training of the cadets, as compared with any preceding period, this board can give no information which you do not already possess, for the reasons assigned in the first part of this report. The effects of discipline are rather felt than seen; and it requires a longer habitual intercourse with the young gentlemen of this corps than the board have enjoyed, to enable them to speak advisedly or understandingly on this point. There are, however, some suggestions (even under the acknowledged incompetency) which the board would throw out at hazard.

They have great faith in the mode of government for military men, or those training to the profession of arms, which has resulted from the long experience of so many nations; and they therefore would with great hesitation advise any change which would not present almost a moral certainty of ameliorating, and not conflict with the sterner obligations to duty. But as parents, as members of the great Christian family, they would ask, whether more security might not arise from the moral influence of a zealous, conscientious chaplain on these youths, than by any other known means. Approving of the system of trial by court martial in an institution like this, they would ask, whether the present practice, which obtains in these trials, is the best that could be devised for convicting and punishing the offender against good morals or discipline. They would ask, whether it is not exposing an ingenuous youth to a fearful moral trial, to coerce his presence, and exact from him, under oath, testimony which must go to the conviction of a fellow comrade (perhaps no more culpable than himself) and results in his own dismission from the Academy with disgrace. It is enough to touch, thus lightly, on the subject; the board do not intend more in this place than to throw out some general remarks: more would, indeed, be unnecessary; for the subject you will find discussed in detail in the very able report of one of the committees. Their object here is only to invite your attention to what struck them as a most momentous concern to the highly intelligent youths with whom they have been brought into contact. Are they all the board could wish them, and they sincerely believe they approach near to that condition, still they would guard them from evil by the most effectual of trials, self-arraignment before the tribunal of conscience. The board do not, sir, offer you a remedy, if one be necessary; they

only commit the subject to your care feeling assured, that the parental interest you must take in the institution will lead you to apply the most proper correction.

With regard to the improvements called for in the physical comforts of the cadets, the board would observe that the barracks now occupied by them, are ill-arranged and inconvenient structures for the purpose to which they are applied. Three or four cadets are huddled together in rooms, some of which are barely sufficient for the comfortable accommodation of two persons, and some not large enough for the comfortable accommodation of one alone. The board would therefore recommend a thorough examination, by a competent board of engineer officers, into the present state of the buildings, to the end that, if they admit of alteration, by which comfort and salubrity can be obtained, it be made as speedily as it can be done.

In connexion with this subject, the board would offer some further suggestions, which have grown out of their examination into the fiscal concerns of the institution. With every confidence in the officer selected by the Secretary of War to preside over this institution, they would still inquire, whether the large improvements, in the way of the erection of new buildings, demolishing or removing old ones, changing the physical aspect of the Point, by opening new avenues and clearing away its timber, should not undergo the revision of a board of competent engineer officers before the plans are submitted to the Secretary of War for his approval. This method, the board believe, is pursued in the Engineer and Ordnance corps, and in other branches of service, where large disbursements are made; and it is one, which further strikes the board, a proper regard for the strict application of the public calls for in all cases, not only to secure the public against damage, but to relieve the officer himself from a heavy responsibility, which he ought not unnecessarily be made to bear.

The board would further recommend that all further disbursements for the library be placed under the care of a committee of the academic staff, to be elected annually from and by their own body, and that it be made their duty to see that this most important auxiliary to the well-being of the school be supplied with the most useful and necessary works; and that they be kept in as good a state as the funds yearly granted by Congress for it, when most judiciously applied, will admit of.

They would also advise that no future appropriations be asked for by any department of the institution, except for specific objects, the cost of which shall be previously ascertained as nearly as practicable; and that it be made obligatory upon the heads of each department to see that the appropriation, when granted, be applied promptly and specifically to the purpose for which it was asked; and that in future no sum be allowed to lie over, from year to year, to the prejudice of the institution. They would, finally suggest and recommend that these provisions for future disbursement be made *immediately* to apply to all unexpended balances now on hand.

The board observed with regret that the subjects of mineralogy and geology, although constituting a part of the regular course of studies prescribed for the cadets, had, for some time back been omitted, owing to a want of sufficient instructers in the chemical department. This omission, which the board regard as a serious defect in the general course of instruction, they understand might be remedied, by having another assistant professor detailed from the line of the army to attend to this branch. The importance of this study to those engaged in civil engineering, or in the survey of the country, is too obvious to call for any particular remarks from the board; they would therefore simply confine themselves to urging on your consideration the propriety of making such immediate provision for its future prosecution at the Military Academy, as your office may place at your disposal; and that, at some opportune moment, the subject be brought before Congress, in order that a more permanent provision be made to carry out those of a temporary character, which you may have been pleased to introduce.

The late addition to our military establishment of two regiments of light dragoons, as well as the repeated recommendations of previous Boards of Visiters, have suggested to this board, whether some provision should not be made to have a school of cavalry tactics attached to this academy. The importance of early training to those who are to constitute a permanent part of this force, the board deems of sufficient weight to fix your attention upon the best means of accomplishing it. They have not, however, sufficient data to enable them to point out the manner in which the object to be attained might be best arrived at, and would therefore leave its details entirely in your hands, as one who is more conversant with the facilities which the service itself offers for giving effect to their recommendations. They therefore only reiterate their convictions of the necessity of some preparatory school for cavalry officers, which, it strikes them, is scarcely less important than the schools of artillery and infantry tactics, through which the officers of these arms of service are now obliged to pass.

In closing their general report, the board would refer you to the separate reports of their several committees, as containing the most elaborate and ample details on the different subjects confided to their investigation; and which, in this place, they have been able only to present you with such a very cursory glance. Could the board permit themselves to indulge in all the reflections that have been called forth by the very interesting and highly important duties in which they have been engaged, they are fearful that, however pleasing the theme to themselves, and instructive to the public, the report might deter many from its perusal by its length. They will therefore terminate it by asking any candid inquirer after truth, any citizen solicitous for his country's good alone, any patriot proud of the elevated rank she is destined to take among the nations of the earth, whether this institution is fulfilling the great ends of its original founders, and the best wishes of its present friends, in the aid which the country at large is deriving from the number of well-trained youths in the military profession which it yearly sends forth, not only into the regular service of the nation, but into the ranks of the militia, scarcely less the immediate object of public care. Whether the bond of union between these two branches of our military force is not daily deriving more strength from the concert of action which necessarily arises from a common source of instruction, at which both are now being supplied. Whether the obstacles to a perpetual union, arising from the great geographical divisions of our country, and to which the monitory voice of the illustrious Washington referred, and so anxiously sought to guard it, can be overcome by any more effective means than in the diffusion of knowledge from a single source, and teaching her sons, when men can alone be taught with the certainty of success, that lesson of divine wisdom, love one another. Whether the country has not reaped, and is not now daily reaping, from building up and sustaining this institution, benefits immeasurably greater than she has conferred in a pecuniary point of view. And whether, finally, a cheaper plan, equally effective, can be devised by human wisdom for attaining the objects, which it was intended to accomplish, of supplying the army and militia with able, intelligent officers, and in the diffusion of sound military instruction throughout the country.

The opinion maturely arrived at by this board, upon a close and laborious investigation into the concerns of the academy, is, that it is altogether worthy of the future patronage of the people. Worthy, as a proud memorial of that exalted beneficence which, with equal hand, extends its blessings to the rich and poor. It will be a happy recollection, sir, for them to call up at some future day, that the soundness of this opinion had been sustained by the concurring voices of their fellow-citizens, to whom they submit it, with an earnest recommendation that the

academy be amply fostered, and jealously intrusted *only* to those who shall show themselves worthy of appreciating and carrying out its great purposes.

THOMAS BENNETT, *Pres't*, of S. Carolina.
JOSEPH ADAMS, Massachusetts.
FRANCIS WAYLAND, Rhode Island.
JAMES McKOWN, New York.
RUTGER B. MILLER, do.
ALBERT B. DOD, New Jersey.
JNO. MILES, *Sec'ry*, Pennsylvania.
ELLIS LEWIS, do.
HENRY ROGERS, do.
JACOB WAGENER, do.
HENRY HUNTT, D. C.
JAMES ROGERS, S. Carolina.
JAMES S. BULLOCK, Georgia.
JOHN C. MULLAY, Tennessee.
WM. M. DUNN, Indiana.
M. ARBUCKLE, *Brig. Gen.* U. S. A.

U. S. MILITARY ACADEMY,
West Point, June 17, 1837.

No. 1.

Mr. MILES, from the committee to whom was referred the "*Military Department, including Engineering and Tactics*," made the following report:

To the PRESIDENT, &c:

The committee, in the performance of the duties assigned them, have endeavored to avoid interfering with the peculiar province of any other of the standing committees of the board. The department allotted to us is undoubtedly one of the most important, because, in its scope and by relation, it embraces all the others; but the committee will only advert to those topics which demand their peculiar attention. The institution is based upon the enumerated powers of the General Government "to provide for the common defence." It has, therefore, for its grand object the cultivation of *military knowledge*, in all its branches, to be used in the service of the country when needed, and by means of which only can the common defence be provided for. In the language of Washington, "the institution of a military academy is recommended by cogent reasons. However pacific the general policy of a nation may be, it ought never to be without a stock of military knowledge for emergencies."* Accordingly, the Academy, its instructers, and students, form a part of the army establishment of the United States. The cadets are liable to be called into actual service at any moment, and the whole institution is amenable to the War Department.† When the cadet has graduated, he is placed on the army list for promotion, or he may altogether retire to the walks of civil life. In either case, he has acquired a vast fund of military knowledge, which is ready at the call of his country, whenever made, and which, in time of peace, is devoted to the various works of art which benefit the people; or it diffuses itself among the latter, fostering and establishing the efficiency of a citizen soldiery.

"A military academy," says the Senate of the United States, in an address to the President, Dec. 12, 1796, "may be rendered important. * * *

* Speech of President Washington, Dec. 7, 1796.—American State Papers, Foreign Relations, vol. 3, p. 31.

† Opinion, Attorney General, August 21, 1819.—American State Papers, Military Affairs, vol. 2, p. 30.

Connected with and supported by such an establishment, a well regulated militia, constituting the natural defence of the country, would prove the most effectual as well as economical preservative of peace." These objects appear to have been kept steadily in view, in the successive legislations of Congress, in reference to this institution. It is undoubtedly true that its *plan of instruction* has become more extensive than was originally contemplated. That plan seems to have been designed for a mere tuition of tactics, but in course of time it was found necessary to enlarge the system. By force of the principles of economy and safety of the people, the standing army of the nation is small, but its territories are extensive, and present a vast seaboard and inland frontier. As the population increased, it then became essentially necessary that the officers of that small army should possess a various and extensive knowledge in all the different branches incident and tributary to the art of war. Civil and military engineering thus became important, and other branches were found to be equally necessary. Mineralogy, geology, natural and experimental philosophy, chemistry, mathematics, and drawing, all minister to a useful military knowledge. An acquaintance with constitutional law is also as needful to the soldier as the citizen, in a country where the rights of the people are fixed and sacred. Ethics, as a branch of instruction, is important, if in no other view than this: the students, selected indiscriminately from the several parts of the country, are enlisted in the service for a period of years, and at an age when the mind is best fitted to receive such moral and political impressions as serve to constitute the high character and usefulness of the man in the active scenes of life. To have deprived the students, in this Academy, of that knowledge which is open elsewhere to all other classes of the community, would have been to have sent them forth to the world deficient in those fixed principles which are required in successful public life, as well as in the private stations of society, mental discipline; the sense of moral responsibility, and the obligations of the Christian religion, therefore became important in every point of view.

The committee have thus adverted to these matters for the purpose of giving their hearty approbation to the *course of instruction* pursued in this *military* institution, because the whole of it is directed or necessarily incident to the purposes of the common defence, and therefore within the provisions of the constitution, and true to its founders. In a word, its object is the constitution of a true soldier, who shall serve his country "without fear, and without reproach." A soldier, whose moral as well as purely professional qualities may find deathless examples in the character of a Washington.

It would seem also to be a subject for inquiry, whether the practical results of the institution evince that the course of instruction is according to its objects. Your committee have seen no reason to doubt it. No appointments of cadets are made from peculiar or favored classes, as far as the committee could ascertain; on the contrary, the majority of appointments during the last two years have been of persons from the poorer classes of our citizens. And in the administration of the Academy, during the period of the cadets' study, the dismissions, punishments, and graduations, are awarded with the most entire system of impartiality. We have seen sons of the most distinguished statesmen and soldiers of the land dismissed for misconduct or demerit, while those of the mechanic, the farmer, or the artisan, received the proper reward for talent and application. These are adverted to, not because the slightest distinctions are made in favor of the sons of the poor to the disadvantage of those of the rich, because that would be odiously proscriptive, but because it is the fact that all distinctions are unknown, except those which must exist between superior intelligence, industry, skill, and merit, and the reverse.

The "conduct" and "merit' rolls are kept by the heads of the departments, without the slightest reason for combination in an unworthy purpose, so that the

committee are unaware of any improvement in the course of instruction in this respect. Your committee do not feel themselves at liberty to comment upon the objections which have occasionally been suggested against the institution in a general point of view. Yet they feel bound to state that the utmost economy has been used by the Government, as well as in the institution, consistently with the important objects in view. And a just compensation for the expenditure is yielded to the nation by a service of four years; under a liability to be called into the field in time of need; by the military skill, knowledge, and discipline, which is carried into the standing army; by the eminently valuable services which are rendered in after life by those who continue in the army, with but a meager compensation at best, and a distant prospect of promotion to the higher military stations; by the diffusion of military knowledge (including civil engineering) among the mass of the people by those who resign; and by the ability of the latter to take command of and wield the militia defence of the country, whenever the footsteps of an invading enemy shall pollute our shores.* As to the *military character* of those who have been in actual service, the history of our wars prove, that the children have not disgraced the reputation of their parent school. Wherever they have been engaged, they have been noted for their prudence in design, and their intrepidity in execution. In the late Florida campaigns, scarcely initiated into the active scenes of their profession, they have been found with their wounds in front, shot down "on the battle ground of the advanced guard." We cannot but conclude, and that without disparagement to the character of the militia of the country, that, by force of their education, the deeds of these graduates have been as honorable to themselves as they have been serviceable to their country.

The subjects to which the committee devoted special attention were engineering, and artillery, and infantry tactics. The scope of the course of instruction in both civil and military *engineering* has been so frequently described by former boards as to render any detail at this time unnecessary. Of its great value for the purposes of military efficiency, the committee entertain the same opinion that has been so often expressed. The first, or graduating class, are engaged during the ten months of the year in application to this branch, and during the present examination great proficiency was displayed by the cadets. No changes are necessary or advisable, except the proposed adoption of a text book, about to be published by Professor Mahan, in lieu of the lithographed "notes" or "outlines" formerly prepared by this gentleman, whose acknowledged merit, as an accomplished and skilful professor, gives full assurance that the change will be highly beneficial. The committee, however, beg leave to reiterate the necessity of a supply of sufficient *models*. No new ones (except that of a dry dock) have been procured since 1832. The committee recommend that they be purchased without any unnecessary delay from the funds already appropriated by the Government for that purpose. The possession and use of these are so important to the student, as well as the teacher, that it is exceedingly desirable this recommendation should meet with the earliest practicable attention.

The committee also beg leave to express their satisfaction at the result of the examination in *artillery tactics*. In the examination hall, on the board, in the laboratory, in the field manoeuvres of the battery, mortar practice, and target firing, the class displayed a commendable proficiency. The instruc-

*Up to May 10, 1837, the total number of graduates at this academy is 890. Of these, there are in the military service 350; killed in battle 15; died in service 120; resigned 351; declined 5; disbanded 27; dropped 9; dismissed 13. Of the whole number there were allotted to corps of engineers 59; topographical engineers 2; ordnance 18; light artillery 43; light dragoons 1; dragoons 13; mounted rangers 5; artillery 374; infantry 368; marines 5; rifle 4; civil service 1.

The total number of graduates for the last three years is 141; of them there are in the military service 90· killed in battle 2; died in service 3; resigned 45; declined 1.

tion in this department occupies about four months in the year. The text books are Lallemand's, and the regulations adopted by the board of officers in 1825. It is much to be regretted that, in this important arm of the service, there has been no system adopted. The committee think it not only of great importance to this institution, but to the country, that immediate steps should be taken by the Government towards the establishment of a *system of artillery tactics* embracing the latest improvements of other nations. The academic board have authorized Lieutenant Anderson, under whose charge this department has been conducted, to prepare notes on the service of artillery in the field, in sieges, campaigns, &c., but the want of a regulation book on this subject, combining the experience and knowledge of the nations most expert in the art of war, is evident. In this important branch, too, the want of a regular professorship, with an assistant, is severely felt; and it is strenuously urged to the consideration of the War Department. In addition to the new field battery which is under progress at the Watervliet arsenal, and which will shortly be finished, in order to render this department complete, there are required the following:

1st. Two 12-pounders, iron, with carriages,
2d. Two 6-pounders, do.
3d. One 24-pounder, howitzer, long, with carriage,
4th. One 12-pounder, do. do. do.
5th. A siege mortar, iron bed.
6th. Regulation eprouvette and balls.
7th. Materials for six mortar platforms.

All the deficiencies previously pointed out (with the exception of the light battery for manoeuvring) still remain without a provision for a remedy, which is the subject of the strongest censure.

The committee further request that it may be urged upon the War Department to provide for the procurement of models of carriages of the various kinds used in service, to wit: field, siege, and garrison carriages; models of Congreve rockets, with pattern guns of each kind of the small arms now in use, or as they may hereafter be adopted, viz: musket, rifle, carbine, and pistols, with accoutrements: all these will greatly assist the professor in giving instruction.

The committee have been informed that there are scattered, at different posts and arsenals of the country, *trophy* pieces of the revolutionary war. Although not strictly within the line of their duty, they take the liberty to suggest that these be ordered by the Secretary of War to be collected and deposited, here under the charge of the instructer of artillery. While they will be considered by all as interesting relics, they will serve to awaken associations and remembrances of the glorious deeds of the Revolution in the minds of the youths educated here. Your committee therefore think there is no such fitting place for a depot as the Military Academy of the country. The committee further feel it their duty to call attention to the want of horses for instruction in cavalry tactics, and the art of horsemanship. This has been so repeatedly urged, that nothing remains to be added to the subject, except the suggestion that two files from each company of dragoons in the service might be ordered and stationed here, which, while it would enable the objects to be obtained, would provide a force for police duty.

In infantry tactics, the course of instruction was carefully inquired into by the committee. The instruction in this branch begins with the encampment in June, including the fourth class (the newly appointed) of the cadets, immediately after the annual examination, and continues till October. It recommences in March, and terminates with the expiration of the academic year, making altogether seven months applicable to this course. The tacticial instruction embraces the schools of the soldier and battalion, and evolutions of the line, alternately, by recitations and exercises on the black board, and drills in the field. The battalion of cadets (the number varying in different years from 200 to 250) is divided for this purpose

into four companies. The text book is General Scott's work. No improvement is required in the plan of instruction, and in the execution of it every thing has been done which could be attained, as evidenced at the "examination." Every cadet of the first class resolved questions put indiscriminately, by verbal answers and demonstration on the board. A battalion drill was conducted in the presence of your committee, by cadets ordered from the line for the purpose, and manoeuvres selected by the committee were executed in a highly satisfactory manner; yet this is a subject requiring the action of the department. This part of the instruction is under the direction of Major Fowle, an able tactician, of whose merit successive boards have spoken in high terms. But, at present, there are but *two* assistant instructers, while there is positive necessity for *four*. To make the course perfect, there should be *one* for each of the four companies of cadets. The instructers are officers ordered to the Academy. While at the post, they are continually engaged in inspections of barracks, drills, camp and post duties, class parades, &c. One of them, "the officer in charge" of the police and discipline, (See Regulations, 207 to 211,) is constantly engaged from reveillée till near eleven o'clock at night. Under these circumstances, independent of the necessity above stated in reference to the system, the duty of the *two* present assistant instructers is excessively severe, and prevents a proper performance of the duties of tactical instruction. Your committee, then, recommend that *four* assistant instructers be always stationed at the Point.

As appropriate to this department, the committee have examined the *small arms* used by the cadets. The muskets are in number 328, and are of different weights, to suit the physical strength of the cadets, according to their respective ages. They are kept in good order. There is, however, a great want of *swords*, to supply the cadets who from time to time act as commissioned and non-commissioned officers of their battalion. The present swords were used during the Revolution, are worn, scarcely capable of use much longer, and entirely unfitted for the purpose. A plan of a sword is understood to be in the War Department. Thirty-five, at least, are wanting, and the cost would not exceed 500 dollars. Your committee recommend that expenditure.

The attention of the committee was given to the subject of *courts martial*. They were aware that it has been occasionally suggested by some that, as applicable to the institution, they should be abolished; and, as a substitute, the exercise of a species of parental authority should be vested in the academic board, or a portion of it, with power to counsel, punish, forgive, reinstate, or dismiss. After mature deliberation on this subject, they are satisfied that the present system is the best that can be adopted; and this for several reasons. The institution is a military one, and the cadet is a *soldier*. He should early be made subject to those forms and rules which are to govern him, and to which he is to be amenable when he comes to exercise his profession in the regular army. Military law is based upon the fundamental principles of justice, which form the groundwork of the civil code, and its administration here is equally as important as that of the latter. As to the rights of the accused, it is sufficient to refer to the report of the committee on "religious, &c. instruction;" but as the courts martial themselves, being composed of different officers from different quarters, with a judge advocate especially selected at different periods, no danger of combination, or prejudice against the individual arraigned can exist, while such evils might, by possibility, flow from a stationary, permanent, and resident tribunal of small numbers. As far as inquiry could lead to a proper result, the committee believe that no change is desired, either by the administrative authorities of the institution, or the cadets. As to the punishments, they seem to have been carefully proportioned to the offence, and dismissals have been ordered only where, if the offender had remained, the example would have been dangerous. The supervisory power, too, of the Executive, prevents the possibility of oppression. This power, however, the com-

mittee beg leave earnestly to suggest, should be very rarely used in favor of the sentenced cadet, and only where it is very clearly apparent that injustice has been done. If merely to gratify the pride of a distinguished citizen, to yield to the friendship of personal associations, or to assuage the sorrow of a fond parent, an offending cadet is to be restored to his rank and standing, the very foundation on which the institution has acquired its safety and success—its *discipline*—is undermined. The committee have no reason to believe that this has been the practice, though individual instances may have happened; but they desire that these views should be distinctly made known, that there may be no hope, through "fear, favor, or affection," of a violation of the rules with impunity. In the language of the late President of the United States, "the members of the institution must look to their obligations, and fulfil them faithfully. Unless they do, they must expect to be visited by adequate punishment."*

In conclusion, the committee beg leave to state that they have recommended nothing but what they consider absolutely necessary to remove the obstacles to a completely successful prosecution of the various branches of knowledge included in this department. And they desire that this interesting institution may be recommended to the fostering care of the Government. Those who have doubts of its practical utility, or of the industry, fidelity, and skill employed in its tuition and administration, would cast them off did they but examine the subject for themselves. The life of a cadet is not one of mere useless parade and permitted indolence. From the rising of the sun till the late hours of the night, for four years, away from home and the indulgences of parental fondness, and the vices of bad association—it is a life of study and discipline, both of mind and body, with just sufficient relaxation for purposes of health, and where the objects of temptation to enervate are absent. With plain food, simple garments, and regular hours, the body becomes hardened in strength and vigor, while the mind is fraught with knowledge, and taught habits of inquiry. And when the graduate passes forever from the walls of his *alma mater*, he is ready to take his position in the armies of the nation, skilled and disciplined, an able and willing soldier, for the purposes of "the common defence."

All of which is respectfully submitted.

JOHN MILES, *Chairman.*

JUNE 16, 1837.

No. 2.

MILITARY ACADEMY, WEST POINT, *June* 12, 1837.

Hon. THOMAS BENNETT, *President of the Board of Visiters.*

The committee on the department of Moral, Religious, and Political instructions, make the following report:

Your committee have made such inquiries as were deemed necessary for the purpose of acquiring a correct knowledge of the department assigned to them as

* During the two years ending on the 31st of May, 1837, there have been held at this post, for the examination into the conduct of the cadets, sixteen general courts martial, one garrison court martial, and three courts of inquiry; the latter at the request of the party accused. The proportion of the cadets of the different classes tried during that time was, of the first class 12; of the second 15; of the third 28; of the fourth 12; total 67. Of these, there were sentenced to be dismissed by the courts martial 26, though of these, in several instances, the *same* person was tried, and of these 15 were commuted, or remitted, by the Executive, on recommendation of the court, or from other causes. Of the remaining 11, whose sentences were carried into effect, *six were subsequently restored*, leaving five as the total number actually dismissed during the two years. During the same period, 26 have been otherwise punished than by dismissal, by confinement, extra duty, &c., and nine have been acquitted. Of the above 61 cases, 53 were for offences of the second grade, counting eight demerits; and eight for offences of the third grade, counting five demerits.

the subject of their consideration. They also attended the examination of the cadets from day to day, "for the purpose of ascertaining their progress and improvement in the several branches of study and instruction" falling under that department. The examinations have been continued during eight hours of each day, commencing at six o'clock, A. M., and continuing to eight A. M.; resuming at nine A. M., and continuing to one P. M.; and, again, from two P. M., to four P. M. Those examinations, so far as they relate to this department, closed on Friday evening.

The examination of the cadets upon the subject of moral philosophy was entirely satisfactory to your committee; and it afforded great pleasure to perceive, in that exhibition, abundant evidence of the talents and industry of the professor and cadets under his charge.

The examination on the subject of constitutional law was also creditable to the parties concerned, considering the multifarious duties assigned to the professor, and the limited time allotted by the regulations of the academy to these studies. The progress and improvement of the cadets, in this important branch of their education, was not so great as, under other circumstances, might have been expected. According to the distribution of time, under the present regulations of the Academy, only two hours during each day are allowed for the *study* of *moral* and *political* science, and *one* hour each day for *recitations* in the sciences. By the regulations adopted by the proper authority, *ethics* is enumerated as one of the branches of knowledge required to be taught, as comprising a complete course of education at the Military Academy. By the same regulations, it is declared that "ethics will include moral philosophy and the elements of *national* and *political* law." Of the ethical instruction and improvement, your committee have already spoken as entirely satisfactory. It is to be regretted that, for the reasons already stated, the committee cannot express themselves entirely satisfied with the proficiency of those examined on constitutional law; while the subject of national law is for the same reason, entirely omitted in the present course of studies. The regulations of the army, as applicable to this institution, expressly require that, in addition to a course of "*practical* military instruction" and "engineering," "the science of war" shall be taught. This branch of education may be well understood to extend, not only to those principles of the law military, which regulate the rights and duties of the officer and the soldier, but to the fundamental doctrines of international law, which, having been adopted as the rules of action by all civilized nations, regulate their mode of warfare, and distinguish it from the cruel butcheries of the savage. War, under any circumstances, is one of the greatest calamities which can befall a nation. If it must exist, it is surely the duty of every people to mitigate its evils, by requiring that it shall be conducted according to the law of arms among civilized nations. Every cadet is intended to be qualified for command; and every commander may, in the ordinary prosecution of his duty be placed in a situation where ignorance of international law would be an unpardonable disqualification for the discharge of his military duty. This disqualification might betray him into acts which would involve his country in a war, and tarnish the laurels won by his bravery. The value of this branch of education is acknowledged in civil pursuits; in military life, it appears to the committee to be of still greater importance; and that it should receive its due attention in this institution cannot be too strongly urged upon the War Department.

From what has already been said, it will appear that, in the opinion of your committee, the principles of military law were intended, by the regulations, to be taught at this Academy. But these, also, with the exception of the army regulations, seem to receive no attention whatever. A knowledge of the rights and duties incidental to military life, the powers of military tribunals for the trial of offences, and the principles governing the trial, may do more than any thing else to secure to the officer the obedience to his station, and at the same time to pro-

tect the soldier from any unauthorized acts of violence and oppression. This must be the case where discipline and subordination, necessarily rigid, are sought to be enforced over individuals possessed of a high degree of intelligence and reason. Nothing will so readily secure the assent of such minds as a knowledge of the *nature*, *extent*, and just *foundation* of the authority requiring their obedience. This subject has been brought forcibly to the notice of your committee, by the opportunity which they embraced of attending the court martial which has recently been sitting at this institution, for the trial of two of the cadets for offences against the regulations of the Academy. Witnesses were called upon to give evidence, who claimed to be excused from answering some of the questions put to them, upon the ground that they could not do so without criminating themselves, and thereby subjecting themselves to the punishment sought to be inflicted upon the accused. This privilege was not allowed, and the reason assigned was, that "the witness was not himself upon trial, and, therefore, could not criminate himself." If this privilege is to be denied to every witness upon the ground that he is not himself upon trial, it can never be allowed to any witness, because no witness is ever upon trial at the same time, and in the same cause, in which he is giving his evidence. If a witness voluntarily consents to cover himself with infamy, upon a promise of pardon, for the purpose of convicting a companion in guilt, it is his privilege to do so. But to place him, against his consent and remonstrance, in a condition in which he must subject himself to punishment and reproach on the one side, or to the guilt of perjury on the other, is leading him into such powerful temptation to falsify as ought not to receive favor any where; and more particularly in an institution designed to establish the morals, as well as enlighten the minds, of the youth under its instruction. These observations are not designed to cast the slightest censure upon the respectable officers of the courts martial. These gentlemen, including the accomplished Judge Advocate, are highly intelligent, and conducted the trial, not only with strict impartiality, but, as your committee understand, in conformity with the practice in this respect which has prevailed at the Academy. But the existence of such a practice serves to show a defect in the course of studies at this seat of military learning; for there can be no doubt that, so far as witnesses are concerned, it has resulted in a total subversion of a privilege guarantied to the *soldier* as well as the *citizen*, recognised by the law military* as well as the common *law*, consistent with the *purest moralily* as well as the *noblest feelings* of the human heart, and reposing upon the broad foundation of that holy orison "*lead us not into temptation.*"

The committee have deemed it their duty to speak plainly upon the subjects of knowledge so necessary in military life, because the constitutional authority of Congress to establish this institution depends upon its connexion with the military establishment of the country, and the purposes of national defence. It is the pleasure of the nation that those intrusted with the command of its forces should be gentlemen of correct morals and general science. As the hills of the Hudson have constantly answered, in faithful reverberations to the sounds of the morning and evening gun at this place, so the hearts of the American people have continually responded, with equal fidelity, to every effort of the public authorities for the inculcation of general science in this institution. That general science is highly necessary to the purposes of national defence, is fully admitted by your committee; but it is equally true that this would be insufficient for these purposes, unless the whole science of war, including the elements of martial and international law, shall occupy the prominent ground intended by the founders of this interesting military school.

By the act of Congress of the 14th April, 1818, it is declared, among other provisions reducing the military peace establishment, that there shall be "one

* McComb on Martial Law, 121, 99; Delaplaine, 216.

chaplain stationed at the Military Academy at West Point, *who shall be professor of geography*, history, and ethics, with *the pay and emoluments allowed the professor of mathematics*. This responsible station is, and has been for a considerable time, held by the Rev. Thomas Warren. He is a clergyman of the Episcopal Church, and, in addition to his duties as professsor of ethics, in quality of chaplain, performs divine service every Sabbath in the chapel erected for the purpose. By his invitation, two of your committee, of different denominations, occupied the pulpit during the last Sabbath, one in the forenoon, and the other in the afternoon, for the purpose of religious instruction and divine worship. It is his practice, the committee understand, to extend the same liberality to respectable clergymen of every denomination. The chaplain must necessarily be appointed from among some one of the many denominations abounding in this country of religious liberty and toleration, and the purse of the nation, supplied by all persuasions, must necessarily contribute to his support. If he had no other duties than those of chaplain to perform, there might be just reason to apprehend evil, arising from that tendency of the human mind which too frequently exhibits itself in the pulpit in polemical discussions upon doctrinal questions on which the religious community are divided in opinion. These discussions, however important they may be to particular denominations, cannot, in a national institution, designed for the benefit of all, attended by all, and supported by all, be regarded otherwise than with great disfavor. Exact justice cannot be done to all denominations, where the chaplain must necessarily belong to only one; but the act of Congress establishes a compromise, which as nearly approaches to equality, in this respect, as is consistent with the present condition of the religious world. That act, in requiring that the chaplain "shall also be professor of ethics," and the regulations of the Academy, in enjoining that ethics shall include "the elements of national and political law," have furnished to the people a guarantee that the time and talents of the chaplain shall be largely devoted to the inculcation of those great doctrines of private and public morality in which all denominations agree, and without the observance of which no community can hold a place among civilized nations. A chaplain, competent to teach the doctrines of moral philosophy, and properly imbued with its principles, would always feel too strong a sense of the moral obligation he was under to the American public, from whose purse he derived his subsistence, to allow him to prostitute the influence of his clerical station to the dissemination of the peculiar opinions of the sect to which he belonged. He must necessarily possess enlarged views, and his time being greatly devoted to these liberalizing pursuits, would undoubtedly secure their continuance. To the happy union of ethics with religious instructions may be ascribed the confidence which the present professor has secured among the public at large and the cadets in particular. Religion and morality should go hand in hand. There should not be even the appearance of a separation. The great evil, which is now afflicting, dividing, and sowing the seeds of all uncharitableness in the religious community, is the too frequent neglect of the doctrines of moral philosophy for the purpose of embarking in sectarian discussions. The establishment of a distinct professorship of ethics might seem to give countenance to this practical divorce where the union is necessary to the usefulness of both, and where it is of a nature too sacred, and resting upon authority too high, to be put asunder by the hand of man. The separation ought to be discountenanced, as tending to bring into disrepute among the American people an institution which has been fostered with much care and anxiety, and which, if properly managed, is calculated to be productive of great good. Still, some remedy ought to be provided for the existing evils in regard to the department assigned to the consideration of your committee. It is not within the reach of human capacity for one individual to discharge all the duties which ought to be performed by the chaplain and professor of ethics. Nor is it just that he should be denied the privilege of occasional absence for recreation, allowed by the regulations to the other professors.

The committee beg leave to state that, in their opinion, the subject of *rhetoric* does not occupy the place in the course of academic study which its importance demands. The duties of the military officer frequently impose upon him the necessity of carrying on important correspondence, and require an intimate acquaintance with the English language. Most of the cadets enter the Academy unacquainted with this branch of study, and they must either obtain it here, or enter the service without it. Your committee would therefore recommend that the study of English grammar and the practice of composition be commenced during the first year of the course of study, and prosecuted at intervals during the succeeding years, so that every cadet shall have the opportunity afforded of forming a correct, manly, and fluent style.

The committee, having fully and anxiously considered the subjects referred to them, unanimously recommend to the board to urge, in their general report, the following changes in reference to this department:

1. That proper means be immediately taken to secure to the cadets ample instruction in the "elements of national and political law."

2. That proper means be also taken to secure a due attention to the subject of military law, as forming an important consideration connected with the "science of war," required to be taught in this Academy.

3. That two competent assistant professors of ethics shall be furnished, by detailing officers from the army or otherwise, for the purpose of aiding the present professor, and thus securing ample instruction in the various branches of education assigned to this department.

4. That so much of the unexpended appropriations made for the increase and expenses of the library, as can be spared for the purpose, be applied to the purchase of works for the use of this department. The library, so far as the committee could perceive for themselves, and understand from the professor, is lamentably defective in this particular.

5. That the study of rhetoric be commenced during the first year of the academic course, and prosecuted at intervals to the close.

6. And lastly, that all the professors (including of course the chaplain) be placed upon the same ground, in the regulations respecting occasional absence on furlough, for the purposes of health and recreation.

All which is respectfully submitted.

ELLIS LEWIS, *Chairman.*

No. 3.

Report of Committee on Pure Mathematics.

The committee on the *pure mathematics* beg leave respectfully to report to the Board of Visiters, that they have attended carefully to the duty assigned them. They have found in this department no deficiences to report. The course of instruction pursued in the Academy is extensive, and admirably adapted, both to discipline the minds of the pupils into habits of patient thought, and to prepare them for the study of the many and important branches of science which can be successfully cultivated only by help of the powerful instrument of investigation and analysis furnished by the pure mathematics. The members of the junior classes have been taught, and, your committee are satisfied, *well* taught, the various subjects of algebra, plane geometry, trigonometry, descriptive geometry, the history of shades, shadows, and perspective, analytical geometry, and the differential and integral calculus.

Your committee have been highly gratified with the examination upon these

several subjects. The accuracy and promptitude with which the young men, in general, demonstrated the propositions assigned to them, and answered all the questions put, give sufficient evidence of diligence and faithfulness on the part both of the teacher and the taught. In proof of the excellency of the system of instruction and discipline pursued, the committee would call the attention of the Board of Visiters to the manifestation of thorough scholarship given, almost without exception, by the members even of the lower sections of the different classes.

Signed on behalf of the committee.

ALBERT B. DOD, *Chairman.*

WEST POINT, *June* 15, 1837.

No. 4.

Report of Committee on Applied Mathematics.

The committee appointed on the Applied Mathematics, including Chemistry, Mineralogy, and Geology, beg leave respectfully to report:

The department of the pure mathematics furnishes the peculiar language in which a great part of the truths of mechanics, optics, astronomy, and other branches of the applied mathematics, (mathematiques appliquées,) can be most conveniently expressed; and in respect to exactness, delicacy, flexibility, and power of expression, this branch of language stands unrivalled.

It is by the aid of this peculiar language that the profound and delicate researches of the mathematicians and philosophers of the present and last century have been conducted to a successful issue, and without it their labors must have been comparatively unfruitful in important results. Hence the abstruse and difficult sciences of the applied mathematics have advanced in proportion as the various branches of the pure mathematics have been successfully cultivated. Sir Isaac Newton was compelled to invent the fluxionary calculus, before he could successfully investigate the profound truths contained in his Principia; and it was necessary that a century should be employed in extending and maturing this calculus, by such men as Clairault, Euler, and La Grange, before it was possible that the Mecanique Céleste of La Place could be written.

The elements of the applied mathematics have been taught in the Academy from its origin, and it is not known to the committee that any difference of opinion in respect to their value has ever existed among the visiters. They are fundamental in their character and claims to attention, and are an indispensable part of the education of the accomplished citizen soldier. Their importance, as the committee believe, is equally unquestioned and unquestionable. These circumstances have rendered it unnecessary for the committee, in their judgment, to do more than satisfy themselves that these sciences have been actually taught in the Academy in a manner, and with a degree of success, corresponding with their importance.

To this end, a portion of their attention has been given to an examination of the text books in use in this department of instruction. These are, 1. Boucharlat's Mechanics, translated by professor Courtenay, and adapted to the use of the Academy. 2. Roget's treatises of Electricity and Magnetism, prepared by the author, under the patronage of the (English) Society for the diffusion of Useful Knowledge. 3. Sir David Brewster's Optics. 4. Gummete's Astronomy. 5. Turner's Chemistry.

After a careful examination, the committee think these treatises well adapted to instruction in the respective sciences of which they treat. In respect to their style of research, the analytical method of demonstration, interspersed occasionally, for the sake of variety of proof and illustration, with the synthetical, is used; and they contain numerous examples of its peculiar beauty, symmetry and power, so far as

the elements of those sciences admit. In this respect, as well as in others to which the committee need not on this occasion advert, these works exhibit a most gratifying improvement over those treatises on the same subjects which, within a few years, were in general use in our universities, colleges, and other higher seminaries of instruction. And without dwelling on the topic, the committee may be justified in observing that the professors of this institution, by introducing an improved style of instruction in mathematics, pure and applied, have exerted in those important departments an indirect but extensive beneficial influence in all the higher seminaries of education in the country.

In the demonstrations and illustrations of this abstruse department of the exact sciences, the committee were generally well satisfied with the performances of the cadets.

In almost every instance, they went through the demonstrations and other exercises assigned them, however complicated they might be, with a gratifying degree of promptness, accuracy, and general intelligence. Many questions were put to the young men by the members of the board, well calculated to test their knowledge, which were generally answered promptly and satisfactorily. They were often subjected to very severe tests during the course of the examination. The committee are assured that diligent use has been made of the philosophical apparatus, in illustrating the several branches of this department. And in this connexion it seems proper to observe that the room in which the philosophical apparatus is kept is too small. Some of the most valuable instruments are, for want of room, crowded together so closely, and are placed on shelves so high, and otherwise so inconvenient, that they are in danger of being broken every time they are taken down for use. The committee have been informed, however, that this inconvenience will be remedied, when the edifice now erecting is finished.

The attention of the committee has been particularly drawn to the department of chemistry, mineralogy, and geology. The advances made in these kindred sciences, during the present century, are among the great triumphs of the age in which we live; and the course of instruction in the Academy must be imperfect while this department continues to labor under its present disadvantages. The committee think it their duty to bring these disadvantages distinctly to the notice of the visiters.

Most, if not all, the disadvantages under which this important department labors may be traced to the fact that it has never been established by act of Congress; one consequence of this fact has been, that the instruction in chemistry, mineralogy, and geology, has been given by officers of the army temporarily designated for the purpose. Those officers have performed duties as laborious and responsible as those of any of the professors of the Academy, without receiving, the committee are assured, any compensation for their services, except a small allowance, which has been annually appropriated by Congress, during the last two years, but of the continuance of which there is no reasonable assurance. Another consequence of the same fact is, that the acting professor of chemistry, &c., being constantly liable to be ordered away from the Academy on ordinary military duty, can feel no sense of security in his situation, and therefore has not the same inducement, which may well influence the other professors, to perfect himself in his course; since, when by long service and experience he may have rendered himself most competent to give instruction, he may be ordered to other duties. The committee learn, too, that there has lately been but one officer detailed as an assistant in the department of chemistry, mineralogy, and geology, and that the whole of his time, as well as nearly all the time of the acting professor, having been required to give the requisite instruction in *chemistry*, the highly important branches of mineralogy and geology have been almost entirely neglected during several years past. Another assistant is necessary, to allow instruction to be

given in those branches, as is enjoined in the course of studies prescribed for the Academy. (See regulations of the U. S. Military Academy, p. 16.)

The collection of mineralogical specimens belonging to the Academy is considerable; large enough, perhaps, for the purpose of ordinary instruction. Of geological specimens and drawings, the institution is almost entirely destitute, although it may be safely affirmed that instruction cannot be rendered effective without them. Drawings in series, exhibiting the stratification of rocks, and other geological phenomena, have been brought to great perfection, and may be purchased on reasonable terms.

In examining the chemical laboratory and mineralogical cabinet, the very great importance of several changes and improvements forced itself on the attention of the committee.

The laboratory is by far too small, and the delicate and costly instruments are exposed, for want of a separate apartment in which to keep them, to the corrosive gases which are evolved in the course of the experiments. Besides a chemical laboratory in a place peculiarly exposed to danger from fire, accidental explosions, &c., and in consequence of its situation in the same building with the library and philosophical apparatus, these valuable portions of the property of the Academy are in constant and imminent hazard of being destroyed. A separate building, large enough to meet the wants of the chemical, mineralogical, and geological department, is imperatively called for by the best interests of the institution.

The committee, at the risk of becoming tedious, beg leave to ask the further indulgence of the board, and to claim its still further attention in behalf of the subjects of mineralogy and geology. No place in the United States, they are well satisfied, possesses equal advantages with West Point, for collecting an extensive mineralogical and geological cabinet at a small expense. The first step is, to appropriate suitable rooms for the purpose; and the next, to classify and arrange the present cabinet in the most approved order. This being done, if an invitation were given by the Department of War to the officers of the army stationed at the various military posts in the United States, to collect and send mineralogical and geological specimens in aid of the cabinet, no doubt is entertained that the invitation would be generally responded to, and the collection would rapildy increase. Another way of increasing the cabinet would be, to make exchanges of specimens with individuals and other institutions. To carry this plan into effect, the professor of this department ought to have a small appropriation at his command, with which to pay the expense of the transportation of minerals and other incidental expenses. It is believed that the numerous graduates would cheerfully lend their aid in furtherance of a plan of this kind, and that a large and very valuable collection, both in mineralogy and geology, might be made in a few years, and with a very moderate expense to the Government.

On the ground of the preceding facts and arguments, the committee recommend to the board the adoption of the following resolutions, to wit:

1. That the department of chemistry, mineralogy, and geology, ought to be established by law, on the same footing with the department of mathematics, to wit: with a professor and two assistant professors, to receive the same pay and emoluments, respectively, which are received by the professor of mathematics and his assistants.

2. That a suitable building ought to be erected for the accommodation of the department of chemistry, mineralogy, and geology, apart from the other buildings of the Academy, and furnished with the fixtures and other conveniences necessary for successful instruction.

3. That an appropriation of 400 dollars be recommended for increasing the mineralogical and geological cabinet, by the purchase of specimens, 200 dollars for the purchase of a set of geological drawings, and an *annual* appropriation of

100 dollars, to pay the expense of the transportation of such specimens in this department as may be obtained by exchanges, or received as presents.

All which is respectfully submitted.

J. ADAMS, *Chairman.*

WEST POINT, U. S. MILITARY ACADEMY,
June 15th, 1837.

No. 5.

Report of Committee on Internal Police and Discipline.

The committee to whom was referred the subject of the internal Police and Discipline of the Institution, report:

1st. That, accompanied by several of the professors detailed by Col. De Russy, they visited the hospital barracks, and were conducted through the various apartments by the surgeon, and are happy in stating that every thing had a clean, neat, and comfortable appearance; that they found but one cadet sick, and on reference to the hospital books and report of the surgeon, not over eight sick, on an average for several years past, and but three deatbs in ten years—a strong proof of the great care, attention, and skill, of the officers in this department, and the healthfulness of the Point.

2d. The barracks, for the accomodation of the cadets, remarkably clean, and as comfortable as the construction of the buildings will admit of; and your committee beg leave to reiterate the statements of several former boards of visiters as to the construction of all the buildings, and do most earnestly recommend to the Secretary of War the importance of having this matter attended to by the proper authorities.

3d. *The commons or buildings.* We highly approve of the arrangements made by the superintendent. It ensures the cadets a good and wholesome supply of food, and on equitable terms, averaging from $10 to $12 per month, according to the market's rise or fall of produce. The steward, by this arrangement, has no object to give the cadets scanty and inferior provisions, &c. His expenditures are all sustained by proper vouchers, and audited by a committee of officers, one of whom is the major commandant of the corps.

4th. The arrangement for the disbursement of the funds and pay of the cadets, to wit: the supply of clothing, books, &c., display a care and economy highly commendable.

Although not directly connected with our report, yet we have examined into the condition of all the buildings; we state that the rooms appropriated for the professors of chemistry and natural and experimental philosophy, and the apartment for mineral and geological specimens, are quite inadequate, and the philosophical apparatus is constantly subjected to injury and destruction.

JAMES S. BULLOCK, *Chairman.*

WEST POINT, *June* 16, 1837.

No. 6.

Report of the Fiscal Committee.

The committee to whom was referred the fiscal concerns of the institution, beg leave to report, that they have attempted a discharge of the duties assigned them by the board, and after such inquiries as were deemed necesssary to a proper understanding of the subject committed to their care, give the following hasty detail,

as the result of their labors. They would, however, premise that it seems to them that the Government has the most ample security for an account of the amounts of disbursements intended for the institution, by its connexion and accountability to the Treasury, and other offices of the Government. The committee visited the offices, and inspected the books and abstracts of the paymaster and quartermaster's departments, and are happy to inform the board that they seemed, as far as they could learn from a cursory examination, to be kept with neatness, precision, and system. The committee, conceiving it to be within the scope of their duty, made the further inquiry, what sums had been appropriated by Congress during the preceding and present year, and what amounts remained on hand of the miscellaneous objects of expenditure; and received an answer from the department that the sum of $28,097 27 remained in his hands on the 31st of December, A. D. 1836, of the unexpended balances of the appropriations of former years; for the particulars of which, and a thorough understanding of the various amounts appropriated and expended, for the years 1836 and 1837, reference is made to documents marked A and B, which have been furnished them by the department, and which the committee ask may be considered as a part of their report, in order to a proper understanding of the same. The committee further report that, in obedience to a resolution of the board, adopted on the 15th instant, requiring other and further information of the department respecting the precise amount of money in his hands for the extraordinary expenses of the institution, and when it was deposited, which last call for information has been, by a letter of the superintendent, fully answered and explained; in which he states that a balance of $49,519 27 remains in his hands of the unexpended appropriations for the various uses and departments of the institution, and that the same is deposited in the Mechanics' Bank of New York, and that the balance of the appropriation for the present year of $33,930 75 remains in the Treasury of the United States; all which, without pretending to suggest at this late period of the session of the board what should be done, and leaving it to the discretion of the whole board to direct in this matter, is most respectfully submitted.

In conclusion, the committee suggest the propriety of hereafter paying the annual visiters of this institution either a per diem allowance sufficient to cover actual expenses, or otherwise require the visiter to keep a detailed account of expenses whilst coming to this place, remaining here, and returning home, and let the Government pay it, as it is humbly conceived that every public servant is, or ought to be, worth his expenses; which suggestion is, in addition to the above, respectfully submitted to the consideration of the board, and through them to the War Department.

JAMES RODGERS, *Chairman.*

JUNE 16, A. D. 1837.

A.

Statement of Disbursements on account of the United States Military Academy at West Point, New York, in the year 1836, *by Lieut. Col. R. E. De Russy, United States Engineer, and Superintendent United States Military Academy.*

Heads of appropriations.	Overrun of former appropriations	Unexpended of former appropriations.	Appropriations for 1836.	Applicable for 1836.	Expended in 1836.	Amount unexpended.	Am'nt overrun.
For defraying expenses of Board of Visiters,	332 48	-	2,382 48	2,050 00	2,057 84	-	7 84
For fuel, forage, stationery, printing, &c.	-	6,783 46	12,535 00	19,318 46	6,927 73	12,390 73	
For repairs and improvements,	-	53 75	9,066 00	9,119 75	7,411 46	1,708 29	
For pay of adjutant and quartermaster's clerks,	-	-	950 00	950 00	950 00		
For philosophical apparatus,	-	1,585 00	300 00	1,885 00	115 28	1,769 72	
For models for department of engineering,	-	2,484 77	500 00	2,984 77	210 08	2,774 69	
For the departments of drawing, chemistry, and mathematics,	-	1,498 37	1,235 00	2,733 37	479 91	2,253 46	
For the purchase and repair of instruments for the band,	-	-	392 00	392 00	278 36	113 64	
For incidental expenses of the department of artillery,	-	-	50 00	50 00	50 00		
For increase and expenses of library,	-	1,407 25	800 00	2,207 25	767 08	1,440 17	
For department of mineralogy, &c.	-	1,838 88	-	1,838 88	75 85	1,763 03	
For miscellaneous and incidental expenses,	-	67 15	2,293 00	2,360 15	1,979 26	380 89	
For completing the chapel,	-	34 81	3,500 00	3,534 81	3,280 64	254 17	
For the erection of a building for military and other exercises,	-	14,915 34	-	14,915 34	11,966 86	2,948 48	
For compensation to the acting professor of chemistry,	-	-	600 00	600 00	300 00	300 00	
Dollars,	332 48	30,668 78	34,603 48	64,939 78	36,850 35	28,097 27	7 84

B.

Statement of Disbursements on account of the United States Military Academy at West Point, New York, in the first quarter of the year 1837, by Lieut. Col. R. E. De Russy, United States Engineer, and Superintendent United States Military Academy.

Heads of appropriations.	Overrun of former appropriations	Unexpended of former appropriations.	Appropriated for 1837.	Applicable for 1837.	Expended for 1st quarter of 1837.	Amount unexpended.	Am'nt overrun.
For defraying expenses of Board of Visiters,	7 84	-	2,007 84	2,000 00	-	2,000 00	
For fuel, stationery, printing, transportation, and postage,	-	12,390 73	8,000 00	20,390 73	5,920 41	14,470 32	
For repairs and improvements,	-	1,708 29	10,178 25	11,886 54	741 30	11,145 24	
For pay of adjutant and quartermaster's clerks,	-	-	950 00	950 00	237 50	712 50	
For philosophical apparatus,	-	1,769 72	300 00	2,069 72	15 00	2,054 72	
For models for department of engineering,	-	2,774 69	300 00	3,074 69	-	3,094 69	
For the department of drawing, chemistry, and mathematics,	-	2,253 46	850 00	3,103 46	186 47	2,916 99	
For the purchase and repairs of instruments for the band,	-	113 64	-	113 64	61 75	51 89	
For incidental expenses of the department of artillery,	-	-	300 00	300 00	13 50	286 50	
For increase and expenses of library,	-	1,440 17	600 00	2,040 17	21 12	2,019 05	
For the department of mineralogy, &c.	-	1,763 03	-	1,763 03	74 00	1,689 03	
For miscellaneous and incidental expenses,	-	380 89	1,777 50	2,158 39	62 31	2,096 08	
For completing the chapel,	-	254 17	1,253 35	1,507 52	1,507 52		
For the building for military and other exercises,	-	2,948 48	30,000 00	32,948 48	1,494 53	31,453 95	
For compensation to the acting professor of chemistry,	-	300 00	300 00	600 00	-	600 00	
For a building to contain public stores,	-	-	1,500 00	1,500 00	-	1,500 00	
For yard and workshops,	-	-	8,000 00	8,000 00	-	8,000 00	
For new barracks for U. S. M. detachment,	-	-	4,000 00	4,000 00	-	4,000 00	
For grading grounds and removing temporary buildings,	-	-	350 00	350 00	-	350 00	
For a painting room for professor of drawing,	-	-	800 00	800 00	-	800 00	
Dollars,	7 84	28,097 27	71,466 94	99,556 37	10,335 41	89,220 96	

U.

General estimate of funds required for the service of the United States Military Academy, for the year 1838, *in addition to funds already appropriated, viz:*

For travelling expenses and accommodation of Board of Visiters,	$1,998 04
For general repairs, fuel, forage, stationery, printing, postage, transportation, miscellaneous and incidental expenses, as per detailed estimate marked U.—No. 1,	25,230
For the increase and expense of the library,	800
For completion of the building for recitation and military exercises, per detailed estimate marked U.—No. 2,	18,254 60
For erection of a barn and public stables,	1,000
For compensation to the acting professor of chemistry for one year, ending September 1, 1839,	300
	$47,582 64

R. E. DE RUSSY, *Lt. Col. Sup. Mil. Academy.*

U.—No. 1.

Estimate of funds required for general repairs and improvements of academies, barracks, mess rooms, officers and professors' quarters, wharf, boats, roads, fences, parade ground, &c., for the year 1838, *viz:*

3,000 common pine boards, at 16 cents,	$480
1,500 common hemlock, at 13 cents,	195
800 pine plank, at 25 cents,	200
3,000 feet clear pine plank, at 3 cents,	90
500 joists, at 13 cents,	65
3,000 feet clear pine boards, at 3 cents,	90
500 feet whitewood boards, at 3 cents,	15
25,000 shingles, at $5½	137 50
20,000 laths for plastering, at $2¼,	45
10,000 chestnut laths for fences, at $30,	300
Oak plank for drags, scrapers, and carts,	50
Nails, brads, butts, locks, and screws,	150
Tin, sheet lead, glass, and sash cord,	150
3,000 pounds ground white lead, at 12½ cents,	375
150 gallons linseed oil, at $1 12½,	168 75
50 gallons spirits turpentine, at 62½ cents,	31 25
200 pounds yellow ochre, at 5 cents,	10
Spanish whiting, litharge, paint brushes, &c.	100
20,000 brick, at $6,	120
100 casks lime, at $1¼,	125
20 casks Rhode Island lime, at $3¼,	65
10 casks hydraulic, at $3,	30
500 fire brick, at 8 cents,	40
25 soap-stone backs, at $1,	25

Fire grates, stoves, stove pipe, &c.		$300
Two tons assorted iron,		225
300 pounds steel,		75
Virginia coal and charcoal for blacksmith,		100
Additional compensation to enlisted men employed as mechanics, teamsters, and laborers,		2,000
Pay of citizen mechanics employed in repairs,		1,000
For the gradual levelling and improvement of the plain and parade ground,		500
Fuel: 700 tons coal, at $7,	$4,900	
600 cords wood, at $5,	3,000	
		7,900
Forage: 50 tons hay, at $20,	1,000	
500 bushels corn, at $1,	500	
500 bushels oats, at 50 cents,	250	
500 bushels shorts, at 25 cents,	125	
	1,875	
This same quantity estimated for the last year, but not then appropriated,	1,875	
		3,750
Stationery: 50 reams writing paper, at $5½	275	
5 reams folio paper, at $10,	50	
4 reams envelope paper, at $5,	20	
10,000 quills, at $20,	200	
Blank books for adjutant, treasurer, &c.	75	
Sealing wax, wafers, ink, tape, &c.	25	
		645
Printing: 1,200 academic registers,	250	
Apparatus and materials for lithographic press,	150	
Additional pay to three enlisted men employed in the lithographic office,	350	
		750
Postage of letters received and sent by the superintendent and other officers on public service,		150
Transportation of cadets discharged by order of the War Department,	1,500	
Of officers' baggage, materials, &c.	600	
		2,100
Clerks: Pay of the disbursing officer's clerk,	600	
Pay of the adjutant's clerk,	500	
		1,100
Miscellaneous and incidental expenses:		
130 gallons oil for lighting halls, at $1 25,	162 50	
Candles for the adjutant's, paymaster's, and other offices,	30	
Sand, brooms, brushes, and police tubs,	45	
Chalk and sponge for recitation rooms,	15	
Parchment, and printing of diplomas,	50	
Fifteen cents per day for three enlisted men employed as police and keepers of public rooms,	165	
Instruments and music for the band,	200	

Additional pay to the keeper of the philosophical room,	$60	
Additional pay to the keeper of the chemistry room,	120	
The per diem allowed to an officer of the engineers, for disbursing,	730	
		$1,577 50
		$25,230 00

U.—No. 2.

Estimate of funds required for the completion of the building for military and other exercises at the United States Military Academy, in addition to the appropriations already made.

For plastering the basement story, 572 yards, at 35 cents,				$200 20
Do.	exercise room, 1,640 yards, at 30 cents,			492
Do.	examination hall,	520		
Do.	second story,	4,690		
Do.	third story,	4,968		
		10,178 yds. at 40 cts.		4,071 20
For deafening partitions in second story, 1,500 yards, at 25 cents,				375
Do.	floors in first and second story, 3,027 yards, at 10 cents,			302 70
For stucco cornice, 1,274 feet, at 25 cents,				318 50
For pointing stone walls,				400
For cementing brick walls outside,				100
For carpentry,			$3,345	
For nails, locks, hinges, &c.			625	
For lumber for roof,			2,200	
For scaffolding for cornices,			125	
For tinning roof and gutters,			3,500	
For castings for window guards,			200	
For castings and iron work for portico and stairs,			1,000	
For painting,			1,000	
				11,995
				$18,254 60

No. 14.

REPORT FROM THE TOPOGRAPHICAL BUREAU.

TOPOGRAPHICAL BUREAU,
Washington, November 7, 1837.

SIR: In obedience to your orders of the 7th of September, I have the honor of submitting to you the following statements and report:

1. Statement A, exhibiting the amount required for the Topographical bureau for the year 1838. This statement embraces the pay for clerks, the pay for a messenger, and the sum required for the contingent expenses of the office, amounting to $4,035.

2. Statement B, exhibiting the amount required for surveys for the year 1838. It embraces three items: one for military surveys on the coast and inland frontier; another for the continuation of the survey on the coast of North and South Carolina, with views to inland steam navigation on that coast; and the third, for surveys under the act of April 30th, 1824, amounting to $60,000.

3. Statement C embraces estimates for the various works of improvement, in a state of constructing under this bureau, amounting to $435,969.

4. Statement D is an exhibit of the amounts transmitted to the disbursing officers of the bureau, from the 1st day of October, 1836, to the 30th day of September, 1837, and of the amount for which accounts have been received during the same period.

5. Statement E is an exhibit of the expenditure of the contingent fund of the bureau.

I am further required to present to your consideration a general view of the operations of the bureau since the last annual report. These operations consist in the execution of various surveys and the superintending of constructions for the improvement of harbors and rivers, of which a detailed account of each will now be submitted.

Surveys.

6. The same causes which so seriously limited the operations of the bureau under this head during the last year being still in existence, have had a similar influence during the present, namely: the inefficient and feeble organization of the corps of topographical engineers; in consequence of which, the duty of surveys has been confined to but little more than the completion of the unfinished work of the previous year.

7. The survey of the ledge of rocks at Owl's-head harbor.

8. The survey of the passage into Cobscook bay.—These two have been completed, and reports, plans, and estimates have been received at the bureau.

9. A survey with a view to the improvement of the navigation of the Kennebec river, from Augusta to the shoals below Gardiner.—This was directed by a resolution of Congress during its winter session of 1837. It has been completed, and the report, plan, and estimate received.

10. A survey of Lynn harbor, Massachusetts, with a view to its

improvement.—This survey was the result of an application from certain citizens of Lynn, and was made at their expense. The duty has been completed, and the report, plan, and estimate of the United States engineer who superintended the same have been received at the bureau.

11. The survey of the Crow shoal, Delaware bay, with a view to the construction of an artificial harbor, in pursuance of directions from Congress.—This was an unfinished duty of the past year; but during the present it has been completed, and the report, plan, and estimate are expected at the bureau during the ensuing winter.

12. The survey of the coast of the State of Mississippi, in compliance with a resolution of the Senate, with views referring to additional defences on that coast.—We have not yet been able to commence this survey. It is peculiarly one of a military character; and the army, from which our assistants have been heretofore drawn for such surveys, has been unable to supply them. An effort was made to obtain them from the class of civil engineers of the country; but those of adequate talents and experience were already employed elsewhere, and could not be obtained but at compensations so far exceeding that which it was customary for the United States to pay, or which the appropriation that must have been resorted to could bear, in addition to other demands upon it, that it was deemed advisable to defer it.

No injury is apprehended from this delay, as the work can yet be done in time for the object in contemplation. Efforts will be made to accomplish it during the ensuing winter.

These surveys are a necessary preliminary step in all cases, whether for fortifications or for works of a civil character. A survey is a careful observation of all the peculiarities of a locality, and a correct admeasurement of these and of every thing that will bear upon the object contemplated or the plan to be digested.

The portraying of the survey upon paper is the necessary recording of all facts which have been collected, so as to exhibit them in their proper places, upon a scale sufficiently large to show the relative importance of each, and yet within a limit that will represent a combined view of the whole. The survey, therefore, and the drawings, are a collection, record, and exhibition of the data by which the judgment of the engineer is to be guided in the forming of his plans and estimates; and without which, the plans and estimates can be viewed in no other light than a species of empiricism, more liable to be wrong than right, but right or wrong only by hazard; and with which, his plans and estimates are the more to be relied upon, as the surveys are extensive in the details collected, and accurate in the exhibition of them. Hence the importance of these preliminary operations, and the necessity that they should be executed with great care, and by officers of experience as well as of scientific acquirements.

13. The survey of the coast.—The officer heretofore on that duty still continues on the same.

14. The survey of the northern extremity of Lake Champlain, with a view to its military defences, directed by a resolution of the Senate.—This survey commenced in 1836, and, partially made during that year, has now been completed, and the results will probably be received at the bureau during the ensuing winter.

15. The surveys of the St. Francis, Black, and White rivers, in Missouri and Arkansas.—These are now completed, and the reports, plans, and estimates are expected during the course of the ensuing winter.

16. The survey of the Manitowa river, from its mouth to the Winnebago lake, and of the Fox river, from Green bay to the Wisconsin portage, directed by a resolution of the Senate.—So soon as an engineer could be procured, he was assigned to this duty, and his plan, report, and estimate are expected in the course of the ensuing winter.

17. A survey of the Allegany river from Pittsburg to Olean, directed by a resolution of the House of Representatives.—This survey has been completed, and the officer under whose superintendence it was made is now engaged in preparing the plan, report, and estimate.

18. The survey of the Illinois river from its mouth to the termination of the canal, and of the Kaskaskia river from its mouth to Vandalia, directed by a resolution of the House of Representatives.—The superintendence of these two surveys was placed under the same officer; they have both been completed, and the officer is now engaged in preparing the requisite reports, plans, and estimates.

19. The survey from the southern debouche of the Dismal Swamp canal, down the Pasquotank river, to Elizabeth; thence to Crotan sound, Pamlico, and other sounds, near the coast of North Carolina; and thence by the most practicable route to Winyaw bay, in South Carolina, with a view of determining the practicability of opening an inland communication for steam navigation, from the Chesapeake bay to Charleston, South Carolina, directed by a law of Congress.—This highly interesting and extensive survey was commenced as soon as the proper arrangements could be made, and has been prosecuted with great industry by the officer under whose superintendence it was placed. The survey has been extended throughout the greater part of the coast of North Carolina, and, although the whole distance to Charleston will not be completed during the present season, nor without an additional appropriation, yet the whole will be examined, and a report of its general character be ready for Congress during its ensuing session.

20. The geological surveys authorized by Congress have been prosecuted with the usual zeal and intelligence of Mr. Featherstonhaugh, and a report, full of interest, is now being prepared by him.

21. In addition to the surveys above enumerated, topographical officers have been sent to the army in Florida; to the troops in the Cherokee country; to aid in a military reconnoissance of the eastern frontier of Maine; and to aid in a military reconnoissance of the southwestern frontier.

Constructions.

22. Superintending the construction of the Alexandria canal aqueduct. A more difficult work has been rarely heretofore undertaken. It may with propriety be considered, for boldness of design and skilfulness of execution, as unprecedented among works of that kind. The great interest of the United States involved in the Chesapeake and Ohio canal, of which this connexion with the Potomac, at Alexandria, forms so important a link, and the amounts to which the United States have devoted to the particular structure in question, have been considered sufficient to jus-

tify the detail of one of their own engineers as the superintendent of the work. It has been prosecuted with great and successful industry and skill, under the accidents and discouraging circumstances inseparable from works of this kind. Its success is now placed beyond doubt; the fourth pier is about being erected, and no fears are entertained that the whole work will be completed as soon as the canal, of which it forms so important a part, if adequate means are supplied in time.

23. The opening of a road from the State line of Alabama, through Marianna, to Appalachicola, authorized by a law of Congress of June, 1834.—It is expected that this road will be completed during the ensuing winter; the whole being under contract.

24. The building of a breakwater or pier at the harbor of Burlington, Vermont.—The work is progressing with commendable rapidity; two large cribs, each one hundred feet long, having been sunk and secured.

25. Deepening the channel between the two Hero islands, in Lake Champlain.—The impediment is a shoal of very tenacious clay, with stones of various sizes, and gravel firmly imbedded in it, upon which no current could well act, and in a situation in which there is no current to act. The only means of deepening the channel is, therefore, to cut out the clay impediment and remove it. For this purpose a dredging machine has been employed, and with considerable effect; and from the character of the shoal, I have no doubt that the improvement will be permanent.

26. The building of a breakwater or pier in the harbor of Plattsburg.—A crib of 108 feet has been sunk, and timber enough collected for about 300 feet more. Both in this and in the breakwater at Burlington, it has been found necessary to sink the cribs in deeper water and farther from the shore than was at first contemplated, in order to furnish a secure harbor, adequate to the increasing commerce of these places; which modification from the first plan will have a proportionate effect in increasing the cost of these structures.

27. The improvement of the harbor of White Hall, New York.—This harbor is a narrow arm of Lake Champlain, into the upper end of which Wood creek discharges itself. It had become obstructed by deposites from the creek; but being already narrower than is convenient for its commerce, the usual method of contracting the water-way and removing the deposites by an increased velocity of the current, could not, in consequence, be adopted. It left, therefore, the only alternative—the dredging machine—which has been used to much advantage. But it is clear, from these facts, that the improvement will not be permanent, and that the use of the machine will have to be occasionally repeated. It is, however, I think, equally clear, that, under the circumstances of the case, it was the best plan which could be adopted.

28. The improvement of the harbor of Black river, Jefferson county, New York.—Twenty-six cribs have been finished and placed, making a total length of eight hundred feet. The good effects of the plan are already beginning to develop, and no doubt is entertained that the improvement, when completed, will equal all just anticipations. The estimate now submitted somewhat exceeds that at first made, in which the cost of materials and the quantity of labor were rather underrated. A new item, for pile timber, has also been introduced.

29. The improvement of the harbor at the mouth of Salmon river, Lake Ontario, New York.—The appropriation for this improvement was so small, and so disproportioned to the amount required, that but little has been done, in comparison to what could have been. That a just estimate of the importance of the position may be made, I subjoin the following extract from the report of the superintending officer:

"The importance of this point as a harbor to the maritime people of Lake Ontario is indisputable. Mexico bay, into which Salmon river empties, is a broad, open bay, with a shore of upwards of forty miles in length, with not a single harbor for vessels of a greater draught than $5\frac{1}{2}$ feet. It not unfrequently happens that vessels found off this bay in northwest, west, or southwest gales, are driven within it, and, from the want of a harbor, are lost. The mouth of Salmon river is the only point within this bay which presents facilities for the construction of a harbor suited to the wants of the increasing commerce of Lake Ontario. Even here, after crossing the bar, vessels are compelled to proceed parallel with the shore and bar, through a narrow channel, for nearly four hundred yards, before they arrive at a place of security; and from the violence with which the sea breaks over the bar, and almost entirely across the channel, it not unfrequently happens that they lose their steerage way and are driven on shore. The proposed plan of the piers will obviate this difficulty completely. The southwest pier alone will prove a considerable protection, especially from southwest gales. Running along the bar parallel with the channel, it will afford protection the instant a vessel is under its lee. Even the small portion now built (as was seen in the gale of the 21st ultimo) will be of great advantage. There was still water about three hundred feet farther out than had ever been known before. A vessel arriving within this space would have been safe.

"That a work of this kind will greatly benefit the surrounding country, is evident. No section of country, however rich its soil, however industrious its inhabitants, but must derive great benefit from having a port thrown open to it, through which to transport its produce to market. The harbor at the mouth of Salmon river will open a channel through which will flow the products of a country as rich in soil and enterprise as any in the northern part of New York.

"It may be proper to add, in connexion with this subject, that the Legislature of this State has granted charters to companies for the construction of a railroad from the village of Port Ontario (near the mouth of the river) to Rome; and a canal from the first-mentioned place to Oneida lake. This canal will be less than twenty miles in length, and, when made, will open a communication direct from the Hudson to Lake Ontario, over the shortest possible route; the whole distance from Albany to Port Ontario being less than one hundred and seventy miles.

"On the Salmon river, about four miles from its mouth, is situated the flourishing village of Pulaski, with a population of about eight hundred. The water power, though but little used, is considerable; the river having a fall of about sixty feet within the corporate limits of the village. Here are five stores, a grist-mill, two tanneries, a woollen factory, and a saw-mill; a paper-mill is about to go into operation.

"At the mouth of the river is situated the incorporated village of Port Ontario, which was not in existence prior to the first appropriation, in

1836, for the improvement of this harbor. About ten houses and sixty inhabitants occupied the present site. It has now eighty-four buildings, among which are five dry-goods stores and four taverns. It has a free bridge of upwards of a quarter of a mile in length, and a population of more than five hundred souls. A company has been chartered for the construction of an hydraulic canal along the bank of the Salmon river, by which a large water-power will be brought into action, for manufacturing purposes, within the village.

"I append a statistical table of Port Ontario, obtained from the collector of the port, to whom I am indebted for information respecting the improvements of the village of Port Ontario."

30. The improvement of the mouth of Cattaraugus creek, Lake Erie, State of New York.—Six hundred and ninety feet of crib-work has been sunk and secured, and the two hundred and seventy feet which had been sunk the season before has been built up and finished. Much more work could have been done, but for the inadequacy of the appropriation; yet, even from what has been, the most encouraging effects have resulted.

31. The improvement of the harbor of Portland, Lake Erie, State of New York.—Twenty cribs, making six hundred feet of the western breakwater, were built and sunk this season, and covered with large boulders, forming already a valuable shelter to the harbor in that direction. The work here has, however, also been much less than it would have been if adequate appropriations had been made.

32. The improvement of the harbor of Vermilion, Huron county, State of Ohio.—The operations of the last season were confined to the western pier, of which about four hundred feet were constructed. During the present season, both piers have been extended into the lake; one thousand feet of crib-work having been prepared and sunk, and which, by the close of the season, will be raised to the intended height, which will complete the quantity of work contemplated to have been done at that place during this year. In reference to the effect of the structure in improving the entrance into the river, the engineer writes: "The object being to change the course of the river, and to direct its current upon the sand-bar which obstructed its mouth, and thereby open a channel into the harbor of sufficient depth, this object has been in a measure accomplished; and, had the spring freshets been as powerful as they usually are on this river, the bar would have been entirely removed. A portion still remains; but I feel confident that the next fall and spring freshets will remove it."

33. The construction of a pier or breakwater at the mouth of the St. Joseph's, Michigan.—Six hundred and sixty-seven feet of continuous crib-work has been made and placed at this harbor; three hundred and eighty feet of which constitutes a part of the northern pier, extending outside and across the bar. The southern pier has not yet been commenced. The object is to construct the northern pier first, and then to observe carefully its effect, before finally locating the southern pier.

34. The construction of a breakwater and harbor at Michigan city, State of Indiana.—Eleven hundred and sixty feet of crib-work has been partly finished and entirely secured at this place. Also, a few cribs of the breakwater have been made and sunk, in order to test their durability, and to profit by the experience which will be thereby acquired.

35. The construction of the light-house upon the Brandywine shoal,

near the capes of the Delaware.—No more has been done, in reference to this extremely difficult and hazardous enterprise, than to digest the plan and prepare materials for its execution. In works of this kind, a certain quantity must be executed in the same season, or there is no security, if the quantity be less, that it may not be swept away by the ensuing spring. It is, therefore, necessary that appropriations in the first instance should be large. In the present case the appropriation was not only too small, but was made too late in the season for a judicious commencement of the structure; the bureau was, therefore, obliged to limit its operations, as already indicated.

While upon this subject, it becomes my duty respectfully to state, that complaints from the engineers are universal, both in reference to the amounts appropriated, and to the lateness of the season when appropriations are generally made.

The effect of small and late appropriations is to limit the labor and extend the time in which the work can be completed; thereby exposing the Department to reproaches of tardy and inefficient action; also, to involve the Department in forced execution, at enhanced prices, by which estimates, founded on the supposition of a reasonable support, are made to prove inadequate. Under such a system, materials cannot be prepared, nor contracts be made, nor labor be commanded in time, nor on as favorable terms as could otherwise be obtained. It also exposes the bureau to the necessity, every fall, of discharging many who could be advantageously employed in preparing materials; and to the inconveniences of a new commencement, every season, with mechanics and laborers, scattered at distances, and under other engagements; and with having those of ability and experience, as contractors, in other avocations: thus destroying confidence and creating embarrassments, which always result in enhanced prices.

The plans pursued on these harbor improvements are, generally, promising of success; and are made necessary, from the great and increasing commerce of the lakes, the vast extent of lake-coast, and its singular destitution of harbors or places of shelter. These works are therefore protections to commerce and to human life. The rivers which empty into the lakes are too small to prevent serious obstructions from bars; and these bars are more the effect, in my opinion, of the action of the surf of the lake than of deposite from the rivers. And as it is a fact beyond dispute, that the openings which now exist are the result of the present action of these rivers, in the effort of the current to throw the sands hove up by the surf back again into the lake, we have data upon which plans of improvement can be formed. From these data the plans must be limited to such as, increasing the force of the current of these rivers, enable it to throw back still more of the sand which has been hove up by the surf, and thereby remove still more of the obstructing bar; or to such as protect the mouth of the outlet from the action of the surf; or to the union of both.

The first is what may be denominated the plan of double lines of piers; which contracts the stream, increases its velocity and power, and conducts it over the bar.

The second is the plan of breakwaters. These are artificial structures, placed in the lake at some distance from the shore, and so ar-

ranged as to protect the outlet of the stream from the action of the surf. They are, in fact, artificial islands.

When the stream is one of some power, the first is the plan generally adopted, with the modification of extending one pier farther out than the other, so as to protect the artificial outlet, by a partial breakwater, from the direction from which the most violent and most frequent storms occur. Where the stream is very feeble, a harbor cannot well be formed without a combination of both plans; in such cases, the double lines of piers are of equal lengths, the artificial outlet being protected from the surf by the breakwater placed off at some distance in the lake.

There is no doubt, in my opinion, that the union of the two plans would, in all cases, on these lakes, prove the most efficient and the most durable; but the great expense thus involved has hitherto limited the constructions to the first, with the exception of one case. This exception is that of Michigan city, where a breakwater is being made off in the lake, and the force of the stream is to be increased by parallel piers, so as to enable it to remove the bar at its mouth.

These constructions are combinations of wood and stone. Large cribs of timber are made, and, firmly united, floated to their proper positions, placed adjacent to each other, and sunk and maintained in their places by piles and immense loads of stone.

The ingenuity of the engineers is called into exercise in the construction of his cribs and their size, which must of course depend upon the locality; but the fault least to be avoided is that of making them too strong. The subject being one of daily and increasing interest, I have called upon several officers of the bureau for detailed plans of these structures, and submit those which have been adopted at Salmon river, and at Cattaraugus creek; both of which are places without shelter from storms or from the violence of the surf.*

Having now completed the exposition of duties of the past year, I find myself obliged to call your attention to the inefficient organization of this branch of the public service. You have yourself so frequently witnessed the evils growing from this cause, and they have been so often and in so much detail submitted to Congress, that, in order to avoid uninteresting repetitions, I will limit myself to a few remarks.

The force of the bureau consists of eleven officers having military commissions, (there being one brevet captain of artillery on the duty,) of which the highest rank is that of lieutenant colonel, and the lowest that of captain. This single exposition shows that the grades for subordinate duties, and for noviciates, are wanting. Formerly these grades were supplied by details from the army, but they were again withdrawn on every call for active army service; and after many years of experience and of observation, the system of details was abandoned as possessing but few advantages, and as being replete with defects and with injurious consequences to the army as well as to the duty for which the details were made.

* The drawings referred to in this document are omitted to be printed, under the order of the House of Representatives of September 11, 1837.

But, as the duties of the bureau were not lessened, (in fact, they have been much increased,) and as the aid, however imperfect, from military details, could no longer be obtained, the bureau was obliged, from absolute necessity, to seek this aid from other sources. Its attention was turned to the class of civil engineers, spread over our country; many of whom, from circumstances beyond their control, were thrown out of employ. From this class, it gives me great pleasure to say, the bureau has been able to select many highly-informed, scientific, and experienced officers. But, being without distinctions of rank, it is difficult to establish rights of seniority or control in such a service, and, of consequence, equally difficult to introduce discipline, subordination, and order. The greater number of these appointments being also temporary, and there being no control by law over them, there is no adequate inducement to exertion; no security for duration of service; and no power that can command services in disagreeable seasons, or in exposed and unhealthy localities; while compensations are greater than would be required or expected in a regularly organized and permanent corps.

In such a corps, the permanency of the employment and the prospect of advancement are strong inducements to service at moderate compensations, of which the present system is destitute.

The whole force of civil agents of the bureau, employed during the last year as engineers, amounted to thirty-three, and this also a minimum force, such employments being limited by the necessity of taxing the appropriations for duty as little as possible; and although many of these are temporary, and for the season only, yet, as the number has been required and will be again, the number and expense are permanent, although individuals may be changed.

From the foregoing, then, it will appear that the engineers of this bureau consist of eleven with military commissions, and thirty-three without.

The former are subject to those rules of discipline and subordination which are to be found in the Rules and Articles of War, and the Regulations of the Army; the latter to no other than such as their own convenience and necessities may dictate; and as the greater body is more apt to give character to than to derive it from the smaller, it should not be matter of surprise if irregularities existed, not easily to be avoided, nor to be remedied without the aid of law. The law which would remedy the same is a proper organization of the whole in one corps, with the usual gradations of rank, and subject to the Rules and Articles of War.

As, therefore, economy of cost, efficiency of duties, discipline, and a proper responsibility, all unite in favor of such an organization, I cannot abandon the hope that the same will meet with your approbation, and be in that way brought to the consideration of Congress, under the most favorable aspect.

That my views in reference to the organization may be the better understood, I have the honor of submitting them to your consideration, drawn out in the form of a bill.

Very respectfully, sir, your obedient servant,

J. J. ABERT,
Lt. Col. Top. Engineers.

To the Hon. JOEL R. POINSETT, *Secretary of War.*

A bill for the better organization of the Corps of Topographical Engineers.

Section 1. *Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled*, That the corps of topographical engineers shall be organized and increased by regular promotions in the same, so that the said corps shall consist of one colonel, one lieutenant colonel, four majors, ten captains, ten first lieutenants, and ten second lieutenants; and that graduates from the Military Academy, with brevets of the lowest commission in said corps, may be attached to the same, as is provided by law for other corps and regiments.

Sec. 2. *And be it further enacted*, That vacancies created by said organization, over and above those which can be filled by the present corps, shall be taken from the army, and from such, as it may be deemed advisable, of the civil engineers in the employ of the United States; and that the pay and emoluments to officers of said corps shall be the same as are allowed to the dragoons of the United States.

Sec. 3. *And be it further enacted*, That the authority to employ civil engineers, under the act of the 30th of April, 1824, and the authority by law for the employment of the present corps of topographical engineers, be, and the same are hereby, repealed; and that all letters and packages on public business, to and from the chief of the corps now organized, be free from postage.

Sec. 4. *And be it further enacted*, That the officers of said corps shall be subject to the Rules and Articles of War, and to such regulations as the President may think proper to adopt.

A.

Estimate of funds that will be required for the year 1838, *for clerks and messenger, and for the contingent expenses of the Topographical Bureau.*

Object of appropriation.		Amount.
For clerks and messenger - - - - -		$2,800 00
viz:		
For compensation of 1st clerk in the Topographical bureau - - - - - -	$1,000	
Additional 20 per cent., authorized by the act of 3d March, 1837 - - - - -	200	
For compensation of 2d clerk - - -	1,000	
For compensation of messenger - - -	500	
Additional 20 per cent., authorized by the act of 3d March, 1837 - - - - -	100	
For contingencies - - - - - -		1,235 00
viz:		
For stationary and office furniture - - -	250	
For 100 sheets tracing paper - - -	60	
For 50 sheets antiquarian paper - - -	75	
For binding original maps - - - -	50	
For repairing of instruments returned by the several surveying parties - - - -	500	
For purchase of books and maps - - -	200	
Fuel for three rooms - - - -	100	
		$4,035 00

Topographical Bureau,
November 7, 1837.

J. J. ABERT,
Lt. Col. Top. Engineers.

B.

Estimate of funds that will be required by the Topographical Bureau, for the prosecution of surveys for the year 1838.

Designation of appropriation.	Amount.
For defraying the expenses incidental to making examinations and surveys under the act of 30th April, 1824, and for geological and mineralogical surveys and examinations - - - - - -	$30,000 00
For surveys of a military character, and for the defences of the Atlantic and Western frontier - -	15,000 00
Completing the surveys from the southern debouche of the Dismal Swamp canal to Winyaw bay, South Carolina	15,000 00
Total - -	$60,000 00

Topographical Bureau,
November 7, 1837.

C.

Statement showing the amounts which will be required upon the works named, for the year 1838.

Breakwater at the harbor of Burlington, Vermont -	$50,000 00
Breakwater at Plattsburg, on Lake Champlain, New York - - - - - -	27,500 00
Improvement of the harbor of White Hall, New York -	15,000 00
Improvement of the harbor of Black river, New York -	22,401 00
Improvement of the harbor of Salmon river, New York -	30,000 00
Improvement of the harbor of Cattaraugus creek, New York - - - - - -	32,410 00
Improvement of the harbor of Portland, New York -	35,466 00
Improvement of the harbor of Vermilion river, Ohio -	23,626 57
Constructing a pier or breakwater, at the mouth of the St. Joseph's, Lake Michigan - - - -	51,113 00
Constructing a breakwater and pier at Michigan city, Indiana - - - - - -	60,733 59
Building the light-house on the Brandywine shoal -	87,718 95
Total - -	$435,969 11

Topographical Bureau,
November 7, 1837.

D.

Statement showing the amount of funds remitted to the officers and agents disbursing, under the Topographical Bureau, from the 1st day of October, 1836, to the 30th day of September, 1837, inclusive, and the amount of accounts rendered for settlement by each within the same period.

To whom remitted.	On what account.	Amount remitted.	Am't of ac's rendered.
G. W. Featherstonhaugh, geologist	Surveys under the act of 30th April, 1824 - - - -	$2,400 00	$3,726 82
Lt. Col. James Kearney, - -	Do do do - - - - -	3,858 00	2,889 17
Lt. Col. S. H. Long, - -	Do do do - - - - -	1,500 00	969 42
Major H. Bache, - - -	Do do do - - - - -	2,000 00	1,623 02
Major J. D. Graham, - -	Do do do - - - - -	1,378 32	1,726 91
Capt. W. G. Williams, - -	Do do do - - - - -	1,600 00	1,881 84
Capt. W. H. Swift, - -	Do do do - - - - -	1,307 66	1,939 57
G. W. Hughes, - - -	Do do do - - - - -	7,000 00	6,487 72
W. B. Guion, - - -	Do do do - - - - -	2,900 00	4,746 71
J. B. Petitval, - - -	Do do do - - - - -	1,700 00	446 80
H. Stansbury, - - -	Do do do - - - - -	6,800 00	7,214 92
Major J. D. Graham, - -	Road to be cut out from the northern boundary of the Territory of Florida, by Marianna, to the town of Appalachicola within said Territory, under the act of 30th June, 1834 - - - -	–	4,739 75
Lt. Col. S. H. Long, - -	Survey of a ledge near Owls-head harbor, per act July 4, 1836 -	–	400 00
Do - -	Survey of the passage into Cobscook bay, do do - -	–	300 00
Major H. Bache, - - -	Survey of Crow shoal in Delaware bay, do do - -	–	584 37
Do - - -	Rebuilding light-house on the Brandywine shoal, per act March 3, 1837	–	351 17
Moyamensing Bank, - -	Do do do do do -	7,000 00	338 00
Lt. Col. James Kearney, - -	Survey from the southern debouche of the Dismal Swamp canal to Winyaw bay, South Carolina, per act March 3, 1837. - -	5,142 00	5,078 36
G. W. Hughes, - - -	Survey of the head-waters of Chesapeake bay, per act July 4, 1836 -	–	485 56
H. Stansbury, - - -	Survey of James river, State of Virginia, do do - -	–	512 10
W. B. Guion, - - -	Survey of St. Francis, Black, and White rivers, do do - -	2,090 00	1,193 45

STATEMENT D—Continued.

To whom remitted.	On what account.	Amount remitted.	Am't of ac's rendered.
Capt. A. Canfield, - - -	Surveys of a military character, and for the defences of the Atlantic and Western frontiers, per act July 4, 1836 - - - -	$1,500 00	$1,556 07
Capt. W. H. Chase, - -	Do do do per act July 4, 1836	1,332 70	1,332 70
Lt. J. M. Berrien, - - -	Survey of the mouth of Milwaukee river, do do -	—	36 11
T. B. W. Stockton, - -	The construction of a harbor at Michigan city, Ind., do do -	45,031 00	46,889 11
Do - - -	The construction of a breakwater at the river St. Joseph, Michigan, per act July 4, 1836 - - - - - - -	26,709 00	33,014 40
R. T. P. Allen, - - -	Improvement of the harbor of Portland, on Lake Erie, per act July 4, 1836	13,780 00	14,267 82
Do - - -	Improvement of the harbor of Cattaraugus creek, do do -	19,509 18	20,383 57
Ezra Smith, - - -	Improving the entrance of White Hall harbor, do do -	12,000 00	14,160 90
J. R. Bowes, - - -	Improving the navigation at the mouth of Vermilion river, per act July 4, 1836 - - - - - - - -	26,000 00	26,843 85
N. B. Haswell, - - -	Deepening the channel between the two Hero islands, per act July 4, 1836	7,000 00	7,038 09
Do - - -	Improvement of the harbor of Burlington, do do -	16,000 00	14,750 15
T. Shankland, - - -	Improvement of the harbor at the mouth of Salmon river, per act July 4, 1836 - - - - - - -	7,000 00	3,993 76
Wm. H. Pettes, - - -	Do do do per act July 4, 1836	8,000 00	6,682 44
W. T. Stockton, - - -	Improvement of the harbor at the mouth of Black river, do do -	7,800 00	8,347 33
J. E. Johnston, - - -	Do do do do do -	6,700 00	4,751 96
Charles M. Watson, - -	Construction of a harbor at Plattsburg, New York, do do -	20,000 00	19,331 62
		$264,947 86	$271,015 54

Topographical Bureau, *November* 7, 1837.

E.

Statement showing the expenditure of the contingent fund from the 1st day of October, 1836, to the 30th day of September, 1837.

Nature of expenditure.	Amount.
Stationary and public documents - - -	$604 22
Maps and instruments - - - - -	94 00
Books and maps - - - - -	160 99
Printing - - - - - -	29 50
Postage - - - - - -	158 62
Fuel - - - - - - -	275 20
Freight - - - - - -	14 79
Office furniture - - - - -	392 46
Repairing instruments - - - - -	5 00
Labor and sundries - - - - -	47 25
Total - -	$1,782 03

TOPOGRAPHICAL BUREAU,
November 7, 1837.

Recapitulation of Estimates.

Object.	Amount.
For clerks and messenger - - - -	$2,800 00
For contingencies - - - - -	1,235 00
For surveys under the act of 30th April, 1824 - -	30,000 00
For surveys for military purposes - - -	15,000 00
For completing the surveys from the southern debouche of the Dismal Swamp canal to Winyaw bay, South Carolina - - - - - -	15,000 00
For various harbor and other improvements, authorized by existing laws - - - - -	435,969 11
Total - -	$500,004 11

No. 15.

REPORT FROM THE ORDNANCE DEPARTMENT.

ORDNANCE OFFICE,
Washington, November 20, 1837.

SIR: In obedience to your order of the 7th September last, I have the honor to transmit a report of the general result of the proceedings and operations of this department, between the 1st October, 1836, and the 30th September, 1837.

The papers marked A and B present a general view of these concerns during the last-mentioned period, as well in regard to the amounts of expenditures under the several heads of appropriations, as in reference to their objects, and the various ordnance stations where they have been made.

The first of these (A) shows the whole amount of funds remitted from the Treasury to disbursing officers and others in this department, during the year 1836, to have been - - - $1,593,720 10
That portion of that sum which was expended and accounted for during the same period, amounted to - 1,354,827 48

And that at the close of the year, there remained unexpended, and in the hands of disbursing officers, the sum of - - - - - - - $238,892 62

Statement B exhibits the total amount of funds remaining in the hands of disbursing officers at the close of the year 1836, and which have been remitted to them and others during the first, second, and third quarters of the year 1837. This amount will be seen to have been $1,671,299 83
And the portion of this sum unexpended, and for which accounts have been rendered during the same period, will be seen, in the same statement, to have amounted to - - - - - - - 1,460,064 69

The unexpended balance exhibited in the same statement as being in the hands of the disbursing officers at the close of the third quarter of 1837 having been - $211,235 14

Statement C presents a view of the general result of the operations at the several arsenals and armories of the United States, in the manufacture, repair, and purchase of the principal articles of ordnance, ordnance stores, and building materials. It exhibits the result of these operations to the extent to which they have been completed, during the year between the 1st of October, 1836, and the 30th September, 1837, indicating, among other articles of ordnance and ordnance stores which have been fabricated or procured, the following, viz:

Of artillery, 55 42-pounder, 31 32-pounder, 193 24-pounder, and 37 6-pounder iron cannon; 2 12-pounder and 13 6-pounder brass cannon; 13 12-pounder brass howitzers; 1 42-pounder, 168 32-pounder, and 91 24-pounder barbette carriages; 30 42-pounder, 104 32-pounder, and 16

24-pounder casemate carriages; 1 42-pounder, 27 32-pounder, and 3 24-pounder casemate chasses; 34 32-pounder and 81 24-pounder barbette chasses; 149 field carriages, 56 caissons, 12 travelling forges, 10 mortar beds, and 78 elevating machines.

Of small-arms manufactured and procured, viz: 22,931 muskets complete, and 1,018 carbines made at the national armories; and at private factories, 5,450 muskets complete, 400 common and 489 Hall's rifles, 2,500 carbines, 184 double-barrel guns, 1,000 artillery swords, and 4,272 cavalry sabres.

Of accoutrements for small-arms, 6,648 sets for infantry, 4,088 for cavalry, 25,523 infantry and cavalry cartridge-boxes, 17,241 cartridge-box belts, 18,028 bayonet scabbards, 25,592 bayonet belts, 1,906 rifle flasks and belts, 6,017 rifle pouches and belts, 8,425 sword and sabre belts, and 10,300 waist belts.

Statement D shows the extent of the operations, during the year between the 1st October, 1836, and the 30th September, 1837, which have occurred in procuring ordnance and ordnance stores, under the act of 1808, for arming and equipping the militia of the States and Territories. This statement presents also a view of the expenditures under the act, which have resulted during the same period, in procuring the stores, amounting, for all objects, to $179,102 38. It exhibits, among other articles of ordnance stores procured, 37 6-pounder iron cannon, 13 12-pounder, 15 9-pounder and 12 6-pounder field, and 8 12-pounder howitzer carriages, with their equipments, &c. complete; 22 caissons, 2 travelling forges, 5,750 muskets, 400 rifles, 200 carbines, 350 pistols, 1,000 artillery swords, and 2,670 cavalry sabres.

Statement E exhibits the amount of ordnance and ordnance stores which have been apportioned, for the year 1836, to the several States and Territories, under the act of 1808 for arming and equipping the militia: this apportionment being founded on the recent returns of the strength of the militia, as made by the Adjutant Generals of the militia of the several States to the Adjutant General of the army.

Statement F shows the several articles of ordnance and stores which have been distributed to the militia of the States and Territories, during the year between the 1st October, 1836, and the 30th September 1837.

Statement G presents a view of the munitions of war issued by this department, during the year between the 1st of October, 1836, and the 30th September, 1837, to the army. In this it will appear that 4 12-pounder iron, 17 6-pounder iron, and 6 6-pounder brass cannon, and 10 12-pounder brass howitzers, with their carriages and equipments complete, 5 caissons, 3,137 muskets, 2,860 rifles, 1,296 carbines, 2,518 pistols, 1,645 cavalry sabres, 25 swords, 3,901 sets of infantry, 2,400 sets of rifle, and 946 sets of cavalry accoutrements, are among the principal articles issued.

The agent of the United States lead-mines at Galena reports that no changes have taken place in relation to the condition of the agency, during the year ending on the 30th September, 1837. No returns of lead have been made during that period; and the suits instituted against the delinquents have not been determined.

It will be seen by a reference to the last annual report from this office, that the alleged cause for refusing to pay the stipulated rents was, that

the act of the 3d March, 1807, contained no authority for the collection of rent-lead, under a *license* for *smelting* lead ore; and that the law authorizing the *leasing* of public lands, within the limit of a State, was unconstitutional. The validity of these objections will be tested by the suits now pending.

A full report on the present condition of the agency, and of the mineral lands generally, is expected daily, from an officer of this department, who was recently authorized to proceed to that section of the country for that purpose. On the receipt of his report, it will be transmitted to you, with such further remarks as the information he may communicate may seem to require.

In the event of a sale of the public lands herein referred to, under the authority given to the President of the United States, by existing laws, or by any that may be passed hereafter, it does not appear expedient that any reservation should be made of those designated as the lead region, whether containing lead, iron, or copper ore, or any other mineral or metal whatsoever, with a view to their being wrought for the benefit of the United States.

The sale of these lands has been recommended by this department, in every annual communication, for the last six years, and is again recommended as a necessary measure to prevent the conflicts of public and private interests, and advance the prosperity of the country in that quarter.

It is also recommended, as a general measure, that all the right, title, and interest which the United States may possess in and to all other lands, containing mines of any description whatsoever, appertaining to and being under the control of the Department of War, unless required for purposes unconnected with the Ordnance department, may likewise be sold without reservation, and that the authority of Congress be obtained for that purpose.

In addition to the information exhibited in these various statements, it may be communicated, generally, in regard to the operations of this department, that they have been conducted at the several arsenals, armories, and in the contract service, with the usual fidelity and ability which characterize the agents of this department; and that they have been only limited and impeded by the difficulty so often alluded to, on the occasions of former reports for years past, and specially referred to in the last annual report, (dated the 12th of November, 1836,) viz: the want of additional officers; but a special report having been made, as you have directed, presenting at large the views of this office in regard to an adequate military organization for the service of this department, a further allusion to it does not occur to me as necessary now.

I have the honor to be, sir,

Respectfully, your obedient servant,

GEO. BOMFORD,

Colonel of Ordnance.

The Hon. J. R. POINSETT,

Secretary of War.

STATEMENTS

ACCOMPANYING

THE REPORT FROM THE ORDNANCE DEPARTMENT.

A.—*Statement of the money expended through*

OFFICERS' NAMES AND STATIONS.	Amount of sums remitted, including the APPROPRIATIONS.		
	National armories.	Current expenses of the Ordnance service.	Arsenals.
Charles Howard, armory, Springfield, Mass.	173,119 60	–	–
Daniel Bedinger, armory, Harper's Ferry, Va.	178,811 74	–	–
Capt. J. W. Ripley, arsenal, Augusta, Maine	–	656 42	15,850 00
Major H. K. Craig, arsenal, Watertown, Mass.	–	2,347 63	2,111 82
Capt. B. Huger, arsenal, Fort Monroe, Va.	–	3,333 00	8,609 69
Capt. N. Lowd, arsenal, Vergennes, Vermont	–	128 52	
S. Lansing, jun., arsenal, West Troy, N. Y.	–	21,157 95	31,360 00
Captain S. Perkins and Capt. H. S. Mallory, arsenal, Rome, N. Y.	–	2,475 00	
Capt. J. R. Butler, arsenal, Pittsburg, Pa.	–	16,043 04	16,221 54
Capt. A. Mordecai, arsenal, Frankford, Pa.	–	4,289 45	10,021 18
Captain C. Graham and Lieut. W. Maynadier, arsenal, Pikesville, Maryland	–	1,067 00	995 00
Marcus C. Buck, arsenal, Washington city	–	9,297 26	16,079 85
Moses McArthur, arsenal, near Richmond, Va.	–	122 73	
Major N. Baden and Thomas M. Chandler, arsenal, Augusta, Georgia	–	1,182 59	970 81
Captain E. Harding, arsenal, Mount Vernon, Alabama	–	2,264 58	26,000 00
Lieut. J. Williamson, arsenal, Appalachicola, Florida	–	–	43,445 53
Captain W. S. Newton, arsenal, Baton Rouge, Louisiana	–	3,623 96	18,588 18
Captain J. Symington, arsenal, St. Louis, Missouri	–	7,832 81	18,380 00
Captain S. H. Webb, arsenal, Detroit, Michigan	–	764 78	16,413 70
Capt. J. A. J. Bradford and L. L. Van Kleeck, depot, city of New York	–	3,830 30	11,438 94
W. L. Poole, depot, Charleston, South Carolina	–	832 64	–
Captain J. A. d'Lagnel, depot, Garey's Ferry, Florida.			
Captain J. A. J. Bradford, arsenal, Fayetteville, N. C.			
Major T. C. Legate and J. H. Weber, lead-mines, Galena, Illinois	–	1,951 52	
Maj. R. B. Lee, arsenal, Little Rock, Arkansas.			
Lieut. J. F. Kennedy, depot, St. Augustine, Florida.			
Sundry persons for cannon, gun-carriages, cannon balls, and small-arms	–	–	–
Settlements on audited accounts	–	1,719 38	784 42
	$351,931 34	$84,920 56	$247,270 66

the Ordnance Department, in the year 1836.

balances in the hands of agents on the 1st January, 1836.

APPROPRIATIONS.

Armament of fortifications.	Arming and equipping the militia.	Slating roofs of workshops.	For building a pay office.	For the new arsenal.	National armories at Springfield, Mass.	Constructing water-wheels and machinery.
–	4,431 19	202 29	155 89	1,780 57	25,500 00	
–	–	186 58	–	–	–	317 72
5,000 00						
16,663 08	18,156 52					
30,624 91						
68,260 00	43,853 38					
574 99	14,085 65					
50 00	588 90					
463 26						
38,000 00	1,643 83					
1,424 93						
894 46	2,530 90					
–	350 00					
–	2,541 83					
–	117 35					
128,731 01	123,577 14					
$290,686 64	$211,876 69	$388 87	$155 89	$1,780 57	$25,500 00	$317 72

STATEMENT

OFFICERS' NAMES AND STATIONS.	Amount of sums remitted, including the APPROPRIATIONS.			
	Repairing of the walls of four workshops.	Repair & extension of the public dam.	Erecting store-houses.	Completion of machinery
Charles Howard, armory, Springfield, Mass.	–	–	–	7,693 58
Daniel Bedinger, armory, Harper's Ferry, Va.	650 05	793 66	4,575 02	8,948 32
Capt. J. W. Ripley, arsenal, Augusta, Maine.	–	–	–	–
Major H. K. Craig, arsenal, Watertown, Mass.				
Capt. B. Huger, arsenal, Fort Monroe, Va.				
Capt. N. Lowd, arsenal, Vergennes, Vermont.				
S. Lansing, jun., arsenal, West Troy, N. Y.	–	–	–	–
Captain S. Perkins and Captain H. S. Mallory, arsenal, Rome, N. Y.				
Capt. J. R. Butler, arsenal, Pittsburg, Pa.	–	–	–	–
Capt. A. Mordecai, arsenal, Frankford, Pa.				
Captain C. Graham and Lieut. W. Maynadier, arsenal, Pikesville, Maryland.				
Marcus C. Buck, arsenal, Washington city	–	–	–	–
Moses McArthur, arsenal, near Richmond, Va.				
Major N. Baden and Thomas M. Chandler, arsenal, Augusta, Georgia	–	–	–	–
Captain E. Harding, arsenal, Mount Vernon, Alabama	–	–	–	–
Lieut. J. Williamson, arsenal, Appalachicola, Florida.				
Captain W. S. Newton, arsenal, Baton Rouge, Louisiana.				
Captain J. Symington, arsenal, St. Louis, Missouri	–	–	–	–
Capt. S. H. Webb, arsenal, Detroit, Michigan.				
Capt. J. A. J. Bradford and L. L. Van Kleeck, depot, city of New York	–	–	–	–
W. L. Poole, depot, Charleston, South Carolina	–		–	–
Captain J. A. d'Lagnel, depot, Garey's Ferry, Florida	–	–	–	–
Captain J. A. J. Bradford, arsenal, Fayetteville, N. C.				
Major T. C. Legate and J. H. Weber, lead-mines, Galena, Illinois.				
Major R. B. Lee, arsenal, Little Rock, Arkansas.				
Lieut. J. F. Kennedy, depot, St. Augustine, Florida	–	–	–	–
Sundry persons for cannon, gun-carriages, cannon balls, and small-arms.				
Settlements on audited accounts.				
	$650 05	$793 66	$4,575 02	16,641 90

A—Continued.

balances in the hands of agents on the 1st January, 1836.

APPROPRIATIONS.						
Erecting new dwelling-houses.	National armory at Harper's Ferry.	Purchase &c., of light field artillery.	Suppression of Indian hostilities.	Supplying the arsenals with ordnance stores.	Accoutrements for the army.	The purchase of accoutrements.
982 59	25,838 00					
–	–	–	–	20,958 00	–	14,250 00
–	–	24,680 00				
–	–	11,500 00	38,250 00	–	35,000 00	
–	–	16,000 00				
–	–	–	1,933 28			
–	–	–	23,000 00			
–	–	–	1,800 00			
–	–	–	10,950 00	27,175 00		
–	–	–	151 60			
–	–	–	2,000 00			
–	–	–	878 00			
$982 59	$25,838 00	$52,180 00	$78,962 88	$48,133 00	$35,000 00	$14,250 00

STATEMENT

OFFICERS' NAMES AND STATIONS.	Amount of sums remitted, including the appropriations.			
	Constructing furnaces for heating cannon balls.	Purchase of 3 acres of land, &c. at Mount Vernon.	Purchase of gunpowder.	Purchase of sites and construction of arsenals in Arkan., Mo., and Tenn.
Charles Howard, armory, Springfield, Mass.	–	–	–	–
Daniel Bedinger, armory, Harper's Ferry, Va.	–	–	–	–
Capt. J. W. Ripley, arsenal, Augusta, Maine	–	–	–	–
Major H. K. Craig, arsenal, Watertown, Mass.	–	–	–	–
Capt. B. Huger, arsenal, Fort Monroe, Va.	2,800 00	–	–	–
Capt. N. Lowd, arsenal, Vergennes, Vermont	–	–	–	–
S. Lansing, jun., arsenal, West Troy, N. Y.	–	–	–	–
Captain S. Perkins and Captain H. S. Mallory, arsenal, Rome, N. Y.	–	–	–	–
Captain J. R. Butler, arsenal, Pittsburg, Pa.	–	–	–	–
Captain A. Mordecai, arsenal, Frankford, Pa.	–	–	62,000	–
Captain C. Graham and Lieut. W. Maynadier, arsenal, Pikesville, Maryland	–	–	–	–
Marcus C. Buck, arsenal, Washington city,	–	–	–	–
Moses McArthur, arsenal, near Richmond, Va.	–	–	–	–
Major N. Baden and Thomas M. Chandler, arsenal, Augusta, Georgia	–	–	–	–
Captain E. Harding, arsenal, Mount Vernon, Alabama	–	1,800 50	–	–
Lieut. J. Williamson, arsenal, Appalachicola, Florida	–	–	–	–
Captain W. S. Newton, arsenal, Baton Rouge, Louisiana	–	–	–	–
Captain J. Symington, arsenal, St. Louis, Missouri	–	–	–	5,000
Captain S. H. Webb, arsenal, Detroit, Michigan	–	–	–	–
Capt. J. A. J. Bradford and L. L. Van Kleeck, depot, city of New York	–	–	–	–
W. L. Poole, depot, Charleston, South Carolina	–	–	–	–
Captain J. A. d'Lagnel, depot, Garey's Ferry, Florida	–	–	–	–
Captain J. A. J. Bradford, arsenal, Fayetteville, N. C.	–	–	–	–
Major T. C. Legate and J. H. Weber, lead-mines, Galena, Illinois	–	–	–	–
Major R. B. Lee, arsenal, Little Rock, Arkansas	–	–	–	5,000
Lieut. J. F. Kennedy, depot, St. Augustine, Florida	–	–	–	–
Sundry persons for cannon, gun-carriages, cannon balls, and small-arms	–	–	–	–
Settlements on audited accounts	–	–	–	–
	$2,800 00	$1,800 50	$62,000	$10,000

ORDNANCE OFFICE,
Washington, November 20, 1837.

A—Continued.

balances in hands of agents on 1st Jan. 1836.			Total amount.	Amount expended and accounted for.	Balances remaining in the hands of disbursing officers, 31st Dec. 1836.
APPROPRIATIONS.					
Purchase of a site and construction of an arsenal at Fayetteville, N. C.	Purchase of cannon balls.	Arsenal at St. Louis.			
–	–	–	212,883 12	190,613 91	22,269 21
–	–	–	221,103 68	198,657 96	22,445 72
–	–	–	21,506 42	13,222 19	8,284 23
–	–	–	74,487 05	61,049 88	13,437 17
–	–	–	45,367 60	39,978 88	5,388 72
–	–	–	128 52	103 02	25 50
–	–	–	189,311 33	174,220 27	15,091 06
–	–	–	2,475 00	2,467 77	7 23
–	–	–	131,675 22	100,418 97	31,256 25
–	–	–	76,949 53	74,315 53	2,634 00
–	–	–	2,525 26	2,002 14	523 12
–	–	–	81,020 94	62,267 39	18,753 55
–	–	–	122 73	118 00	4 73
–	–	–	4,086 68	4,005 98	80 70
–	–	–	64,490 01	30,350 68	34,139 33
–	–	–	43,445 53	38,562 81	4,882 72
–	–	–	25,637 50	2,440 21	23,197 29
–	–	3,071 62	36,434 43	24,642 28	11,792 15
–	–	–	17,178 48	17,178 48	
–	–	–	55,936 07	39,893 22	16,042 85
–	–	–	1,101 59	855 53	246 06
–	–	–	2,000 00	2,000 00	
7,590 00	–	–	7,590 00	4,202 95	3,387 05
–	–	–	1,951 52	1,951 52	
–	–	–	5,000 00	–	5,000 00
–	–	–	878 00	874 02	3 98
–	13,621 94	–	265,930 09	265,930 09	
–	–	–	2,503 80	2,503 80	
$7,590 00	$13,621 94	$3,071 62	$1,593,720 10	$1,354,827 48	$238,892 62

G. BOMFORD,
Colonel of Ordnance.

B.

Statement of the money expended through the Ordnance department during the first, second, and third quarters of 1837.

STATIONS.	Amounts transmitted in the first, second, and third quarters of 1837, and balances remaining in officers' hands at the close of the year 1836.	Amount of accounts rendered in the first, second, and third quarters of the year 1837.	Balances remaining in officers' hands on the 1st of October, 1837.
Armory, Springfield, Mass. -	$190,212 16	$170,054 85	$20,157 31
Do. Harper's Ferry, Va.	238,411 84	199,951 97	38,459 87
Arsenal, Augusta, Maine -	62,267 14	18,000 33	44,266 81
Do. Watertown, Mass. -	112,218 67	96,064 42	16,154 25
Do. Fort Monroe, Va. -	54,090 72	46,784 52	7,306 20
Do. Vergennes, Vt. -	86 50	86 50	
Do. West Troy, N. Y. -	200,712 06	200,108 96	603 10
Do. Rome, N. Y. -	1,296 23	1,236 65	59 58
Do. Pittsburg, Pa. -	100,847 25	89,280 91	11,566 34
Do. Frankford, Pa. -	124,654	124,204 36	449 64
Do. Pikesville, Md. -	4,831	3,731	1,100
Do. Washington city, -	68,777 56	62,532 32	6,245 24
Do. near Richmond, Va.	91 73	32 61	59 12
Do. Augusta, Ga. -	5,871 32	5,070 38	800 94
Do. Mount Vernon, Ala.	46,139 33	42,512 49	3,626 84
Do. Appalachicola, Flor.	43,382 72	34,485 60	8,897 12
Do. Baton Rouge, La. -	23,197 29	9,143 75	14,053 54
Do. St. Louis, Liberty, Mo. and Memphis, Tenn. - -	58,783 09	44,361 58	14,421 51
Do. Detroit, Mich. -	17,052 13	17,052 13	
Do. Fayetteville, N. C.	30,387 05	26,705 29	3,681 76
Do. Little Rock, Ark. -	7,120	1,516 05	5,603 95
Depot, city of New York -	24,096 96	11,490 12	12,606 84
Do. Charleston, S. C. -	3,260 62	3,020 24	240 38
Do. Garey's Ferry, Flor.	10,500	9,908 53	591 47
Do. St. Augustine -	831 98	548 65	283 33
Lead-mines, Galena, Ill. -	1,218	1,218	
Sundry persons, for cannon, gun-carriages, cannon balls, and small-arms - -	240,733 62	240,733 62	
Settlements on audited acc'ts	228 86	228 86	
Total, dollars	1,671,299 83	1,460,064 69	211,235 14

ORDNANCE OFFICE, *Washington, November* 20, 1837.

GEORGE BOMFORD, *Col. of Ordnance.*

C.

Statement of work done and articles fabricated, procured, and repaired, at the national and private armories and ordnance stations, from the 1st October, 1836, to the 30th September, 1837, inclusive.

MADE AND PROCURED.

CLASS 1.

2	12-pounder brass cannon.
13	6-pounder do.
1	12 do. brass howitzer,
12	12 do. do. mountain.
55	42 do. iron cannon.
31	32 do. do.
193	24 do. do.
37	6 do. do.
1	24 do. iron howitzer.
1	12 do. do.

CLASS 2.

1	42 do. carriages, barbette.
10	32 do. do. do.
17	24 do. do. do.
4	32 do. casemate.
2	24 do. do. do.
158	32 do. upper, barbette.
74	24 do. do. do.
1	42 do. chasses, casemate.
27	32 do. do. do.
3	24 do. do. do.
34	32 do. do. barbette.

STATEMENT C—Continued.

MADE AND PROCURED.

CLASS 2.	81	24-pounder chasses, barbette.
	26	42 do. carriages, iron, casemate, upper.
	72	32 do. do. do. do. do.
	14	24 do. do. do. do. do.
	112	Iron chasses apparatus, sets complete.
	24	12-pounder stock trail carriages.
	26	9 do. do. do.
	42	6 do. do. do.
	40	24 do. do. do. howitzer.
	17	12 do. mountain howitzer carriages.
	10	10-inch mortar-beds.
	56	Caissons, assorted.
	78	Elevating machines.
	12	Traveling forges.
CLASS 3.	303	Rammers and sponges, assorted.
	209	Rammers and staves, do.
	197	Sponges and staves, do.
	57	Ladles and worms, do.
	138	Ladles and staves, do.
	122	Worms and staves, do.
	158	Lead aprons.

STATEMENT C—Continued.

MADE AND PROCURED.

CLASS 3.

104	Tarpaulins.
113	Bricoles.
12	Drag-ropes.
198	Tompions.
89	Priming wires.
3,648	Sponges.
772	Sponge covers.
496	Sponge buckets.
202	Tar buckets.
153	Water buckets.
344	Linstocks.
342	Portfire stocks.
825	Portfire cases.
195	Portfire clippers.
192	Prolonges.
276	Tube pouches.
165	Tube boxes.
21	Gunner's gimlets.
509	Gunner's haversacks.
149	Artillery harness, sets for four horses.
19	Artillery saddles.

STATEMENT C—Continued.

MADE AND PROCURED.

400	Traversing handspikes.
122	Trail do.
719	Budge barrels.
5	Cannon locks, percussion.
59	Thumbstalls.
3	Thermometers.
1	Verifying instruments, set.
3	Spirit levels.
40	Ladles for hot shot.
10	Tongs for do. pair.
6	Dark lanterns.
472	Implement straps, sets.

CLASS 3.

52	24-pounder grape shot.
333	12 do. do.
313	6 do. do.
34	12 do. canister shot.
100	6 do. do.
513	6 do. loose canister shot, lbs.
33	12 do. shells, strapped.
731	Iron stands for grape shot.
4029	42-pounder cannon balls.

CLASS 4.

STATEMENT C—Continued.

MADE AND PROCURED.

CLASS 4.	36,460	32-pounder cannon ball.
	3,621	24 do. do.
	1,911	10-inch shells.
CLASS 5.	1,032	6-pounder grape shot, fixed.
	273	12 do. howitzer ammunition, fixed.
	441	24 do. do. canisters, filled.
	112	12 do. strapped-shot, fixed.
	685	6 do. do. do.
	280	12 do. canister shot, do.
	1,700	6 do. do. do.
CLASS 6.	22,931	Muskets, national armory, complete.
	5,450	Do. contract, do.
	489	Hall's rifles, do.
	2,500	Hall's carbines, do.
	184	Double-barrel guns, do.
	1	Prussian model do. do.
	400	Common rifles, do.
	3,000	Pistols, do.
	1,000	Artillery swords.
	4,272	Dragoon sabres.
	402	Cane-cutters.

STATEMENT C—Continued.

MADE AND PROCURED.

CLASS 6.	
Screw-drivers.	25,745
Wipers.	21,254
Ball-screws.	545
Spring-vices.	3,377
Bullet-moulds.	435
CLASS 7.	
Infantry accoutrements, sets complete.	6,648
Dragoon do. do.	4,088
Cartridge boxes, infantry.	20,811
Do. dragoon.	4,712
Cartridge box belts, buff.	15,253
Do. do. black.	1,988
Bayonet-scabbards.	18,028
Bayonet-belts, buff.	20,798
Do. black.	4,794
Sabre-belts, buff.	2,000
Do. webbing.	300
Artillery sword-belts, buff.	6,225
Rifle flasks and belts.	1,906
Do. pouches and belts.	6,017
Do. pouches.	6,524

STATEMENT C—Continued.

MADE AND PROCURED.

CLASS 7.	Rifle flasks	1,316
	Do. waist belts.	10,300
	Holsters, pair.	4,303
	Housings.	5,423
	Gun-slings.	26,133
	Brushes and picks.	20,941
	Buckets and straps, carbine.	252
	Swivels, do.	748
	Flints, assorted.	10,000
	Flint caps.	65,450
CLASS 8.	Powder, cannon, lbs.	748,700
	Do. musket, lbs.	251
	Do. rifle, lbs.	69,600
	Do. mealed, lbs.	8,650
	42-pounder flannel cartridges.	21
	32-pounder do. do.	21
	24-pounder do. do.	113
	12-pounder do. do.	318
	9-pounder do. do.	210
	6-pounder do. do.	3,162

STATEMENT C—Continued.

MADE AND PROCURED.

CLASS 8.

529	24-pounder howitzer flannel cartridges.
19,442	Cartridge bags, flannel, assorted.
868,131	Musket ball and buckshot cartridges.
138,025	Pistol ball cartridges.
414,280	Carbine do.
157,473	Rifle do.
106,930	Musket blank cartridges.
31,100	Pistol do.
30,000	Carbine do.
26,621	Musket bullets, lbs.
26,445	Pistol do. lbs.
15,436	Rifle do. lbs.
34,793	Buckshot, lbs.
1,329	Rockets.
98	Rocket cases, Congreve.
1,000	Serpents.
282,150	Percussion caps.
3,451	Portfires.

STATEMENT C—Continued.

MADE AND PROCURED.

CLASS 8.	Priming tubes, full.	23,963
	Do. do. empty.	1,600
	Priming boxes.	890
	Fusees, full.	2,082
	Quick match, lbs.	37
	Wheel cases.	124
	Nitre, refined, lbs.	9,110
	Sulphur, refined, lbs.	1,994
	Charcoal, do. lbs.	1,889
	Cannon wads.	2,309
	Cannon cartridge paper, lbs.	13,934
	Musket do. do. lbs.	4,343
	Wrapping paper, lbs.	3,737
CLASS 9.	Axletrees, assorted.	22
	Wheels, do.	32
	Beltplates, do.	24,351
	Bridles.	12
	Collars.	15
	Girths.	201
	Saddles.	3

STATEMENT C—Continued.

MADE AND PROCURED.

CLASS 9.	
Harness, cart, sets.	23
Do. wagon, sets.	4
Canisters.	1,274
Canister and shot blocks.	1,925
Cartridge box blocks.	19,456
Trace chains.	131
Ox chains.	27
CLASS 10.	
Gins.	4
Gin-blocks, sets.	27
Gin-falls.	2
Sheaves.	11
Wagons, common.	2
Do. truck.	2
Carts, common.	19
Do. sling.	2
Chains for sling carts.	3
Sleds.	4
Wheelbarrows.	72
Trucks.	41
Hydrants.	13
Pumps.	7

STATEMENT C—Continued.

MADE AND PROCURED.

CLASS 10.

2	Sleighs.
1	Bell, large.
1	Do. house.
6	Scales and weights, sets.
5	Patent balances.
3	Steel-yards.
2	Mathematical instruments, sets.
11	Eprouvette beds.
70	Eprouvette balls.
1	Planing machine.
1	Steam-engine.
3	Boats.
2	Mortars and pestles.
2	Forcing-pumps.
1	Hose-carriage.
17	Hose-screws, pairs.
1,298	Hose, feet.
2	Paint-mills.
1	Corn do.
1	Choking-machine.
6	Founders' flasks.

STATEMENT C—Continued.

MADE AND PROCURED.

PART SECOND.—CLOTHS, &c.

CLASS 10.	
Founders' patterns.	23
Arm-chests.	480
Horses.	20
Oxen.	5
Mules.	2
Flannel, yards.	2,025
Duck, linen, yards.	1,044
Do. cotton, do.	389
Ticking, do.	1,244
Coarse linen, do.	406
Coarse cotton, do.	698
Linsey, do.	375
Oakum, pounds.	500
Junk, do.	3,422
Rope, white, do.	8,127
Do. tarred, do.	564
Rope yarn, do.	22
Tow, do.	327
Sash cord, pieces.	311
Thread, lbs.	609
Twine, do.	592
Fringe, sponge, lbs.	187
Woollen yarn, do.	26

STATEMENT C—Continued.

MADE AND PROCURED.

FORAGE.							IRONMONGERY.									
Corn, bushels.	Bran, do.	Meal, do.	Oats, do.	Fodder, lbs.	Hay, lbs.	Straw, lbs.	Iron, bar, lbs.	Iron, assorted, lbs.	Iron castings, lbs.	Steel, lbs.	Steel, scrap, lbs.	Tin, block, lbs.	Tin, plate, sheets.	Lead, lbs.	Copper, pig, lbs.	Do. sheet, lbs.	Do. scrap, lbs.
3,263	260	494	4,388	1,106	397,089	43,395	1,522,909	114,640	647,123	110,274	1,977	1,632	13,032	22,653	265	9,262	2,810

STATEMENT C—Continued.

MADE AND PROCURED.

IRONMONGERY.

1,487	Brass, lbs.
5,868	Do. sheet, lbs.
84	Do. old, lbs.
3,937	Brass and copper castings, lbs.
24,406	Composition castings, lbs.
1,651	Tin, gutter, feet.
9,218	Tin water pipes, feet.
769	Lead do. feet.
47,334	Buckles, No.
359	Brass cocks, No.
4,438	Brass wire, lbs.
1,301	Iron do. lbs.
34,948	Nails, cut, lbs.
720	Nails, wrought, lbs.
85,840	Brads, No.
2,834	Spikes, lbs.
329	Nails, copper, No.
83,500	Sprigs, iron, No.
312,694	Tacks, iron, No.
115,000	Tacks, brass and copper, No.

STATEMENT C—Continued.

MADE AND PROCURED.

IRONMONGERY.	Screws, gross.	989
	Hinges, assorted, pairs.	1,170
	Knobs and handles.	213
	Latches.	232
	Locks, assorted.	493
	Locks, pad.	102
	Stoves and pipes.	27
	Grates.	9
	Kettles, iron.	8
	Pots.	8
	Chalk, lbs.	356
	Nave boxes, brass.	75
	Do. iron.	42
	Emery, lbs.	1,375
	Glue, lbs.	341
	Bristles, lbs.	350
	Sand paper, quires.	1,372
	Ox horns, No.	100
	Jack chains.	66
LABORATORY STORES.	Acid, muriatic, lbs.	1
	Acid, nitric, lbs.	320
	Acid, sulphuric, lbs.	1,527

STATEMENT C—Continued.

MADE AND PROCURED.

LABORATORY STORES.

Alcohol, galls.	168
Whiskey, galls.	12
Alum, lbs.	9
Antimony, lbs.	63
Arsenic, lbs.	2
Bees-wax, lbs.	30
Borax, lbs.	334
Candles, lbs.	1,151
Copperas, lbs.	81
Flour, lbs.	465
Gum Arabic, lbs.	9
Gum camphor, lbs.	5
Gum copal, lbs.	37
Gum shellac, lbs.	23
Rosin, lbs.	583
Sal ammoniac, lbs.	55
Soap, lbs.	421
Spelter, lbs.	1,405
Spirits of nitre, lbs.	7
Tallow, lbs.	1,272
Vitriol, oil of, lbs.	1,717

STATEMENT C—Continued.

MADE AND PROCURED.

LABORATORY STORES.	7	Vitriol, blue, lbs.
	2,211	Woollen rags, lbs.
	4,909	Zinc, lbs.
LUMBER, GUN-CARRIAGE TIMBER, BUILDING MATERIALS, &c.	36	Barbette carriage timber, sets.
	31	Casemate do. do.
	17	Seacoast mortar bed timber, sets.
	32,206	Seacoast carriage timber, feet.
	261,271	Carriage timber, assorted, feet.
	172,521	Oak timber, square, board measure feet.
	6	Oak logs, No.
	82	Pine logs, No.
	155	Hickory logs, No.
	3,186	Locust timber, board measure feet.
	140,790	Pine timber, board measure feet.
	4,181	Pine timber, cubic feet.
	501	Cypress timber, cubic feet.
	787,879	Plank, assorted, feet.
	900,935	Boards, assorted, feet.
	220,804	Scantling, feet.

STATEMENT C—Continued.

MADE AND PROCURED.

LUMBER, GUN-CARRIAGE TIMBER, BUILDING MATERIALS, &c.

Joist, feet.	121,825
Shingles, feet.	487,764
Laths, No.	171,000
Mahogany, feet.	264
Lignum vitæ, lbs.	472
Scaffolding poles, No.	111
Hoop poles, No.	3,463
Fence posts, No.	572
Musket stocks, No.	33,825
Rifle and carbine stocks, No.	3,377
Naves, No.	22
Spokes, No.	1,247
Hammer-handles, No.	1,300
Brick, No.	3,551,375
Do. fire, No.	3,648
Stone, building, perches.	2,010
Do. cut and hewn, feet.	31,995
Slate, squares.	421
Do. No.	8,350

STATEMENT C—Continued.

MADE AND PROCURED.

LUMBER, GUN-CARRIAGE TIMBER, BUILDING MATERIALS, &c.					LEATHER, &c.										PAINTS, OIL, GLASS, &c.					
Lime, bushels.	Cement, do.	Sand, do.	Hair, do.	Plaster of Paris, lbs.	Leather, assorted, lbs.	Do. do. sides.	Do. buff, hides.	Do. do. lbs.	Bear skins.	Calf skins.	Sheep skins.	Morocco skins.	Goat skins.	Old leather, bushels.	Lead, black, pounds,	Do. red, do.	Do. white, do.	Ochre, red, do.	Do. yellow, do.	Crome, yellow, do.
15,993	1,901	21,800	202	4,960	19,918	5,290	2,249	1,066	248	194	120	428	66	1,227	20	104	20,884	34	3,436	142

STATEMENT C—Continued.

MADE AND PROCURED.

PAINTS, OILS, GLASS, &c.

127	Crome, green, pounds.
2	Dragon's blood, do.
11	Prussian blue, do.
196	Spanish brown, do.
45	Sugar-of-lead do.
471	Lamp-black, do.
210	Litharge, do.
70	Putty, do.
8	Terra de Sienna, do.
64	Umber, do.
23	Venetian red, do.
177	Verdigris, do.
4,468	Whiting, do.
14,179	Paints, mixed, do.
5,540	Oils, assorted, gallons.
100	Varnish, do.
38	Lacker, do.
260	Spirits turpentine, gallons.
248	Tar, do.
16	Pitch, do.
310	Pit-coal tar, do.
17,175	Glass, feet.
4124	Do. lights.

STATEMENT C—Continued.

MADE AND PROCURED.

STATIONARY.	111	Blank books.
	86	Blank accounts, quires.
	737	Paper, cap, do.
	1,417	Do. post and letter, quires.
	512	Do. envelope, do.
	266	Do. drawing, sheets.
	411	Pens, steel.
	560	Pencils.
	7,594	Quills.
	92	Sand, writing, lbs.
	10	Sealing-wax, lbs.
	7	Wafers, lbs.
	16	Ink, black, gallons.
	4	Ink, red, do.
	29	Braid, pieces.
	199	Tape, do.
TOOLS.	6	Adzes.
	29	Anvils.
	300	Augers.
	553	Awls.
	64	Axes.

STATEMENT C—Continued.

MADE AND PROCURED.

TOOLS.

Bellows, pair.	22
Bits, No.	870
Braces, No.	31
Bench screws, No.	25
Buff-wheels, No.	28
Buttresses, No.	8
Brushes, assorted, No.	735
Camel's hair pencils, No.	31
Callipers, pair.	64
Casting ladles, No.	37
Clamps, No.	155
Chisels, assorted, No.	397
Do. cold, No.	377
Do. splitting, No.	85
Do. stockers', No.	12
Do. turners', No.	227
Compasses, pairs.	54
Countersinks, No.	83
Creasers, No.	2
Crowbars, No.	46
Crucibles, No.	1,644

STATEMENT C—Continued.

MADE AND PROCURED.

TOOLS.

3	Cutting machines, No.
4	Diamonds, glazier's, No.
96	Dies and stocks, No.
104	Dies and taps, No.
30	Drawing knives, No.
6	Drilling machines, No.
381	Drills, No.
73	Drill-stocks, No.
31	Drifts, No.
52,459	Files, assorted, No.
315	Formers, No.
197	Fullers, No.
15	Funnels, No.
1	Fringe-loom, No.
148	Gauges, No.
301	Gimlets, No.
237	Gouges, No.
62	Grindstones, No.
276,252	Do. lbs.
330	Hammers, assorted, No.
19	Hardies, No.
25	Hatchets, No.

STATEMENT C—Continued.

MADE AND PROCURED.

TOOLS.

Heading-tools, No.	235
Hoes, No.	19
Laboratory knives, No.	58
Ladders, No.	5
Lamps, No.	56
Lanterns, No.	14
Lathes, turning, No.	14
Jack-screws, No.	53
Mallets, No.	42
Mandrills, No.	463
Milling-machines, No.	25
Mortising-machines, No.	7
Nippers, pairs.	11
Oil-stones, No.	31
Picks, No.	40
Pincers, pairs.	25
Planes, assorted, No.	129
Plane-irons, assorted, No.	107
Pliers, pairs.	25
Ploughs, No.	4
Polishing-wheels, No.	4

STATEMENT C—Continued.

MADE AND PROCURED.

TOOLS.

Punches, No.	361
Rasps, No.	46
Reamers, No.	125
Rules, No.	60
Saws, assorted, No.	229
Scoops, No.	27
Screw-drivers, No.	44
Scissors and shears, pairs.	31
Shot and shell gauges, No.	90
Sieves, No.	20
Sledges, No.	99
Soldering-irons, No.	6
Shovels, No.	330
Spades, No.	32
Spoke-shaves, No.	31
Squares, No.	73
Stamps, No.	160
Swedges, No.	209
Scythes and sneads, No.	11
Tilt-hammers, No.	4
Tongs, pairs.	395

STATEMENT C—Continued.

MADE AND PROCURED.

TOOLS.	Vices, assorted, No.	103	
	Wedges, iron, No.	242	
	Wrenches.	65	
MISCELLANEOUS.	Ammunition boxes.	290	
	Do. kegs.	680	
	Do. sacks.	816	
	Barrels.	34	
	Boxes, packing.	2,294	
	Brooms.	641	
	Coal, pit, bushels.	74,678	
	Coal, char, do.	159,867	
	Coal, anthracite, lbs.	642,637	
	Wood, cords.	2,813	
	Demijohns.	21	
	Jugs.	17	
	Oil cans.	22	
	Hogsheads.	14	
	Tierces.	10	
	Powder barrels.	7,094	
	Salt, bushels.	32	
	Clover seed, bushels.	11	
	Gravel, do.	1,200	
	Sacks, corn.	17	

STATEMENT C—Continued.

REPAIRED.

109	Cannon, cleaned and lackered.
4	Mortar beds, iron, do.
2	Field carriages.
20	Gun carriage wheels.
4	Wagons.
6	Carts.
1	Do. hand.
15	Pent-houses.
30	Rammers and sponges.
31	Ladles and worms.
5	Artillery harness, sets.
11	Cart do. do.
4	Artillery saddles, No.
24	Bricoles.
150	Fusees.
9	Fusee extractors.
900	Howitzer ammunition, altered and repaired, rounds.
36	12-pounder strapped shot, fixed.
473	6 do. do. do.
101	12 do. canister shot, do.
216	6 do. do. do.
2	Mortar beds, repainted.
8	24-pounder gun carriages, repainted.

STATEMENT C—Continued.

REPAIRED.

13	12-pounder gun carriages, repainted.
4	24 do. howitzer carriages, repainted.
332	Canisters, repaired.
6410	Musket cartridges altered and repaired.
5082	Muskets.
736	Rifles.
1321	Rifles, Hall's.
230	Muskets, cleaned and oiled.
20	Artillery swords.
330	Sabres.
283	Cartridge boxes.
15	Cartridge box-belts.
115	Bayonet-scabbards.
100	Bayonet-belts.
270	Brushes and picks.
15	Sword-belts.
720	Sabre-belts.
500	Cannon-powder, rolled, aired, &c., lbs.
5000	Musket do. do. do.
516	Ammunition-kegs.
156	Packing-boxes.
3249	Shot and shells, cleaned, lackered, &c.
15	Sponge-buckets.
13	Tar-buckets.
39	Linstocks.
27	Port-fire stocks.
19	Port-fire cases.
11	Port-fire clippers.
1349	Files, re-cut.

ORDNANCE OFFICE, *Washington, November 20, 1837.*

GEO. BOMFORD, *Colonel of Ordnance.*

D.

Statement of the arms, accoutrements, &c., procured, and of the expenditures made, under the act for arming and equipping the militia, from the 1st October, 1836, to the 30th September, 1837.

ARMS, &C., PROCURED.

Six-pounder iron cannon	37
Twelve-pounder field-carriages, with implements, harness, &c., complete	13
Nine-pounder field-carriages, with implements, harness, &c., complete	15
Six-pounder field-carriages, with implements, harness, &c., complete	12
Twelve-pounder howitzer carriages, with implements, harness, &c. complete	8
Caissons	22
Travelling forges	2
Muskets	5,750
Rifles	400
Carbines	200
Pistols	350
Artillery swords	1,000
Cavalry sabres	2,670
Infantry and cavalry cartridge-boxes	5,637
Bayonet and waist belts	2,420
Sword and sabre belts	400
Holsters, (pairs)	1,664
Sets cavalry accoutrements	207

EXPENDITURES, VIZ:

Amount paid for arms, &c.	$171,673 87
Amount paid for inspection, packing-boxes, storage, and distribution to the States and Territories	7,338 51
	$179,012 38

ORDNANCE OFFICE,
Washington, November 20, 1837.

GEO. BOMFORD,
Col of Ordnance.

E.

Apportionment of arms to the militia for the year 1836, *under the act of* 1808, *for arming and equipping the whole body of the militia.*

States and Territories.	Date of return.	Number of militia.	No. of arms apportioned in muskets.
Maine - - - - -	1836	42,468	478
New Hampshire - - -	1836	27,473	310
Massachusetts - - - -	1836	44,911	505
Vermont - - - -	1824	25,581	287
Rhode Island - - - -	1832	1,377	15
Connecticut - - - -	1836	23,826	268
New York - - - -	1836	184,728	2,078
New Jersey - - - -	1829	39,171	442
Pennsylvania - - - -	1834	202,281	2,275
Delaware - - - -	1827	9,229	104
Maryland - - - -	1836	46,854	528
Virginia - - - -	1836	101,838	1,146
North Carolina - - -	1835	64,415	724
South Carolina - - -	1833	51,112	576
Georgia - - - -	1834	48,461	545
Alabama - - - -	1829	14,892	167
Louisiana - - - -	1830	14,808	166
Mississippi - - - -	1830	13,724	154
Tennessee - - - -	1830	60,982	687
Kentucky - - - -	1836	71,483	805
Ohio - - - - -	1836	146,428	1,647
Indiana - - - -	1833	53,913	606
Illinois - - - -	1831	27,386	309
Missouri - - - -	1835	6,170	70
Arkansas - - - -	1825	2,028	23
Michigan - - - -	1831	5,476	62
Florida Territory - - -	1831	827	9
Wisconsin Territory - - -	None.		
District of Columbia - - -	1832	1,249	14
		1,333,091	15,000

ORDNANCE OFFICE,
Washington, November 20, 1837.

GEO. BOMFORD,
Col. of Ordnance.

F.

Statement of the ordnance and ordnance stores distributed to the militia, under the act of April, 1808, from the 1st of October, 1836, to the 30th September, 1837.

20	6-pounder	iron	cannon.		
6	12-pounder	field-carriages,	with implements,	&c.,	complete.
12	9	do.	do.	do.	do.
36	6	do.	do.	do.	do.
32	24	do.	howitzer carriages,	do.	do.
1	12	do.	do.	do.	do.
16	caissons, complete.				
1,345	muskets and appendages.				
3	rifles	do.			
1,020	pistols	do.			
100	artillery swords.				
722	cavalry sabres.				
1,936	sets infantry accoutrements.				
320	do. rifle	do.			
412	do. cavalry	do.			
612	sabre and sword belts.				
1,378	infantry and cavalry cartridge-boxes.				
565	holsters, (pairs.)				

The whole being equivalent in value to 7,525 muskets.

ORDNANCE OFFICE,
Washington, November 20, 1837.

GEO. BOMFORD,
Col. of Ordnance.

G.

Statement of the artillery, small arms, accoutrements, and other ordnance stores issued to the troops and the Engineer department, from the 1st of October, 1836, to the 30th of September, 1837.

FIRST CLASS.	4	12-pounder iron guns, with carriages complete.
	17	6-pounder do.
	6	6-pounder brass guns, with carriages complete.
	10	12-pounder brass mountain howitzers, complete.
SECOND CLASS.	4	12-pounder mountain howitzer carriages.
	8	6-pounder truck wheel carriages.
	1	12-pounder caissons.
	4	6-pounder do.
	5	Travelling forges.
THIRD CLASS.	6	Gunners' quadrants.
	4	Priming wires.
	22	Sponges.
	12	Portfire cases.
	1	Prolonge.
	2	Bricoles.
	1	Portfire clipper.
	1	Artillery harness, set.
	9	Tarpaulins.
	1	Fusee extractor.
	4	Shell hooks, pairs.
	4	Fusee implements, sets.
	6	Shot ladles.
	4	Budge barrels.

STATEMENT G—Continued.

FOURTH CLASS.	100	24-pounder cannon balls.
	100	12 do.
	300	6 do.
	44	24-pounder shells.
FIFTH CLASS.	1,012	6-pounder strapped shot, fixed.
	100	6-pounder grape shot, fixed.
	1,247	6-pounder canister shot, fixed.
	250	6-pounder spherical case shot, fixed.
	166	12-pounder shells, fixed.
	100	24-pounder grape shot, fixed.
SIXTH CLASS.	3,137	Muskets, complete.
	860	Hall's rifles.
	2,000	Common rifles.
	1,296	Carbines.
	2,518	Pistols.
	1,645	Sabres.
	25	Swords.
	400	Cane cutters.

STATEMENT G—Continued.

SEVENTH CLASS.

Infantry accoutrements, sets.	3,901
Rifle accoutrements, sets.	2,400
Cavalry accoutrements, sets.	946
Infantry cartridge boxes.	64
Cartridge box belts.	68
Bayonet belts.	117
Bayonet scabbards.	410
Brushes and picks.	293
Gun slings.	90
Carbine cartridge boxes.	1,775
Holsters, pairs.	354
Saber belts.	916
Sword belts.	25
Throggs.	50
Slings and swivels.	587
Spring vices.	12
Wipers.	38
Screw drivers.	136
Rifle bullet-moulds.	21
Musket flints.	38,212
Rifle flints.	20,000
Pistol flints.	19,500

STATEMENT G—Continued.

EIGHTH CLASS.

4,500	Cannon powder, pounds.
2,500	Musket do. do.
6,500	Rifle do. do.
2,800	6-pounder cartridge bags.
95,000	Musket ball cartridges.
81,560	Musket ball and buck shot cartridges.
40,320	Musket buck shot cartridges.
45,000	Musket blank cartridges.
30,000	Rifle ball cartridges.
214,030	Carbine ball cartridges.
34,000	Carbine blank do.
105,000	Pistol ball do.
30,000	Pistol blank do.
500	Rifle bullets, pounds.
500	Buck shot, pounds.
3,100	Tubes, filled.
700	Portfires.
230	Slow match, pounds.

STATEMENT G—Continued.

EIGHTH CLASS.	Cartridge paper, pounds.	560
	Fusees, filled.	400
	Percussion caps.	171,210
	Refined nitre, pounds.	300
	Priming boxes.	1,050
	Rockets.	350
MISCELLANEOUS.	Belt plates.	33
	Twine, pounds.	40
	Flannel, yards.	300
	Cartridge thread, pounds.	20
	Cotton thread, do.	5
	Rope, pounds.	100
	Junk, do.	1,000
	Sling cart.	1
	Gin fall.	1
	Gin handspikes.	2
	Beam, scales and weights.	1
	Bar lead, pounds.	2,500
	Linseed oil, gallons.	5¾
	Lampblack, pounds.	1
	White lead, do.	48

STATEMENT G—Continued.

MISCELLANEOUS.

Litharge, pound.	1
Spirits turpentine, gallons.	31½
Lacker, gallons.	8
Neat's foot oil, gallons.	6
Prussian blue, pound.	½
Browning, gallons.	2
Musket and rifle charges.	2
Wad former.	1
Copper driver.	1
Dredging boxes.	3
Copper pans.	6
Powder measures.	3
Funnels.	2
Copper adze.	1
Laboratory knives.	24
Rosin, pounds.	50
Antimony, do.	30
Refined whiskey, gallons.	10
Artificers' tools, sets.	1
Armorers' tools, do.	1
Smiths' tools, do.	1
Laboratory tools, do.	2

ORDNANCE OFFICE, *Washington, November* 20, 1837.

GEO. BOMFORD, *Colonel of Ordnance.*

ORDNANCE OFFICE,

Washington, October 27, 1837.

SIR: Agreeably to your orders, I have the honor to present herewith a project of a bill exhibiting the views of this department as to the increase of the number of officers in the Ordnance department, rendered necessary by its present extended operations.

Before proceeding to examine the features of this project, it is deemed proper to state, for your satisfaction, that it is not a proposition of recent origin; but, on the contrary, as a measure of importance in the right organization of this department, it has been agitated for many years past, having received the sanction of the War Department during that time, and that of the late President of the United States in a special message to the Senate of the 3d of June, 1836. It is nearly the same in substance as that of the Senate bill No. 5, of the second session of the 24th Congress, which passed the Senate, and, with many other bills, failed in the House of Representatives, as was generally understood, for want of time. A project for an increase, in most respects similar in its provisions, was transmitted to the chairman of the military committee of the Senate in a communication from the Department of War of the 11th May, 1836, with the recommendation of that Department; and an increase of this corps was strongly recommended in general terms in the annual report of the Secretary of War of the 3d December, 1836; such increase being also urged in the annual message of the President of the United States of the 5th December, 1836. It is evident, therefore, that the late administration was strongly impressed with the necessity of additional officers for the service of this department.

But in order to show the grounds for the favorable opinion herein referred to, it may be well to take a general view of the changes in its organization since the war of 1812; exhibiting, at the same time, as briefly and as little in detail as is consistent with a proper understanding of the subject, its gradual enlargement since that period, as shown in the increase of its annual expenditures, its number of posts, its number of operatives annually employed, and the whole amount of ordnance and ordnance stores in the land service, subject to its constant supervision with a view to preservation and repair, issue and reception, and quarter-yearly accountability.

By the act of the 14th May, 1812, the Ordnance department consisted of fourteen officers, at a time when there were seven posts. But it was found necessary, in consequence of its insufficiency to meet the exigencies of the service, to increase this number to nineteen officers; which was effected by the act of the 2d August, 1813. This force continued in being until the year 1815, during which interval such great inconveniences were experienced from that diminutive organization, (when, too, there were only eight posts,) that the department was enlarged to the number of forty-four officers, by the operation of the act of 8th February, 1815.

To show the important view in which it was considered at that day, it is to be remarked, that in the general reduction of the army which took place within one month after the passage of this act, all the other corps of the army were reduced, save only that of the engineers, which was retained on the war establishment. The enlargement, therefore, of the ordnance to more than double its number of officers, and the reduction of all other

they may have for the position they occupy, in general ability, knowledge, industry, and devotion to the employer. They are thus placed in a state of constant suspense; during which, little besides plain indispensable duty is accomplished. The little knowledge they might acquire can present no inducement for exertion, from the want of time to bring it to the necessary maturity to admit of practical utility hereafter.

It is hence perceived that the employer, who suffers from this vicious system of change, may contend, not only with the inconveniences of inexperience, and a want of selection even among those uninformed in his particular business, but with a want of exertion, application, and devotion, during the time employed; and thus all the thousand mechanical and other economical arrangements for saving time and expenditure, and perfecting and beautifying the various objects to be accomplished, are entirely lost to the employer. But he is still more injuriously affected by this system when the change extends to superintendents—persons who control large departments of extended business transactions. Such is the case in the changing temporary supply, for the ordnance, of officers from the line of the army, many of whom are at once placed in the control of large and varied departments of public business.

These are principles of general application, but they point especially to all the departments of military affairs, in which it is peculiarly necessary that frequent change should be avoided, as its direct tendency is the destruction of system, order, uniformity, discipline, and, of consequence, that decided efficiency and energy which are so necessary in the action of all military bodies; for the reason, that their failure in military enterprises may often result in signal national disasters.

It is the singular misfortune of the present system of supplying officers of ordnance from the line of the army, as it was of the system of the eleven years referred to, that the above-enumerated evils are not only disastrous in their effects upon the ordnance, but they apply with equal disadvantage to the line of the army, whence the change is made; the difference being only in this, that it requires a state of war to perceive them forcibly in the latter, (and hence they have been so sensibly felt in the late Indian wars;) while in the ordnance, where the operations are nearly the same in peace and in war, they are constantly remarked in all their injurious tendency.

The ordnance officer must be a soldier, an engineer, (civil and military, for his duties refer to both departments,) as well as a person capable of superintending extended business affairs. He commands troops; attends to their police, clothing, arms, &c.; is frequently their commissary and quartermaster. As an engineer, he frequently has the control, preservation, repair, and general improvement of property, to the amount of $1,000,000; the superintendency, in the erection of public buildings, of large numbers of mechanics and laborers, of machinery and mechanical operations; the devising economical ways and means for the execution of those operations, which arise so often in the manufacture of the various weapons of war. As a man of business, he superintends and controls, and accounts to the Treasury for all the expenditures for so large an establishment; and surely, in the transaction of duties of such extent and importance, something like stability and permanency ought to be substituted for a vacillating system of change, equally injurious to the line of the army and to the service of this department.

corps, excepting the engineers, surely presents strong evidence of its importance at that period; yet, at that time its extent was at least two-thirds less than at present. But the attention of the Government happened to be drawn to it then, from the advantages of its operations which had been developed during the struggles of the then recent war. This organization continued during an interval of six years, until 1821; when the number of posts had increased from eight to fourteen, and the average number of operatives employed in the department had increased from about three hundred to five hundred.

By the fourth section of the act of the 2d March, 1821, to reduce and fix the military peace establishment of the United States, the ordnance was merged in the artillery, and all its duties were thenceforth to be performed by details of officers from that corps. This very defective organization continued until 1832, a period of eleven years, during which time it exercised a disastrous influence upon the concerns of the department. This was more especially felt during that interval, as it was then undergoing a rapid enlargement in all its branches, from the gradual extension of the annual expenditures, which had increased during that period from $543,883 14 to $869,820 36; from the number of operatives annually employed, which had increased from five hundred to nine hundred and forty-nine; from the number of posts, which had increased from fourteen to nineteen; and from the great accumulation of ordnance and ordnance stores at the arsenals and fortifications—the necessary consequence of the expenditure of these large sums in the department.

These inconveniences, which were incessantly complained of during that period, arose principally from two causes, operating upon the department, then in a state of expansion by the effects of the policy of the Government.

The first of these was the small number of officers. These being suddenly reduced from forty-four to an average number of little more than one-half, during a period when the number of operatives annually employed, and the amount of expenditures, had nearly doubled; when the number of posts had increased nearly one-half; and when all the other duties were proportionally increased. Instead, therefore, of an increase of the military organization of this department proportioned to this gradual extension, there was a sudden reduction of one-half of its officers, accompanied by the still greater inconvenience of,

Secondly, a want of permanency in the details. It is admitted that, in each regular business of life, the frequent change of persons to whom its transactions may have been confided, and the substitution of new, and, of consequence, inexperienced hands, is invariably accompanied with a loss, which is greater or less, and always proportioned to the complicacy of the business, the capital employed, and the frequency of the change. But this inconvenience, so universally admitted in the ordinary transactions of life, is always found to be increased when the new persons employed are taken without the advantages of selection for some peculiar general fitness. In addition, it is to be considered as an aggravation of the difficulties of frequent change, that the persons destined to this brief service find little inducement for exertion beyond a degree which is barely necessary to carry them through it with ordinary credit. They do not know at what moment the change may arrive; they only know that it will soon happen, and that it will not be delayed from any peculiar fitness

Yet, the act of the 5th April, 1832, now in force, only partially relieved the department from this evil system, as it assigned but fourteen permanent officers; the remainder necessary (when they could be obtained at all) being still supplied under the old system of detail. This act, in fact, placed the department on the footing it occupied in 1812, as to officers, at which period there were also fourteen permanent officers, who had also assistance from officers of other corps of the army, from time to time; yet, how different the extent and importance of the department at the two periods at which these organizations were in force, viz: 1812 and 1837! At the former, there were but seven posts, 300 or 400 men, and property and expenditures in proportion. At the latter, there are twenty-four posts, at which 1,733 men are employed; and away from the posts, employed under contracts, subject to the supervision of ordnance officers, at least 500 more, making a total of about 2,300 men, with appropriations to be expended to the extent of $2,282,115, and an amount of public property in charge, of $19,500,000. Yet, the fourteen officers authorized in 1812 were found inadequate, and were increased, in 1813, to *nineteen*, and in 1815, to *forty-four*, when there were only nine posts.

Seeing, therefore, this large amount of duty to be performed, and the diminutive and disproportionate means to effect it; and being aware, also, of the pressure existing at this time in the department for the want of officers, it is not probable that you would consider the enclosed project of a bill, affording an organization of thirty-six officers in all, as at all exorbitant; but rather the contrary. But if additional reasons were necessary, they might be presented in the still further enlargement of the department, which may be anticipated from bills which have been matured in the Senate, going to establish a national armory in the West, and five or six additional arsenals; with which, however, it would be impracticable to proceed, without the proposed increase.

In regard to the proposed *organization*, I beg leave to state, a little in detail, what appear as advantageous views on the subject.

1st. It is the same as that of the Senate bill alluded to, save only in the rank of the twenty lieutenants, who, by this project, are all proposed to be first lieutenants; this being obviously preferable to having ten first and ten second lieutenants; for the reason, that the vacancies in the ordnance may, in the former case, be invariably filled from the young first lieutenants or old second lieutenants in the line of the army; and thus the places in the ordnance, which always require experience of men and business, will be filled by officers who have served from five to ten years in the line of the army, and who have, during that period, acquired salutary views of discipline and other military knowledge of wide practical utility, when applied to their new positions in the ordnance. This connexion of the line of the army with the ordnance, by which a healthful military spirit is continually infused into the ordnance, is, in consequence, deemed of the first importance. But the advantages of this connexion cannot be acquired, if the lower grade of this corps consist of second lieutenants; for then, the vacancies in the ordnance will be filled from young second lieutenants, or brevet second lieutenants in the line, or from citizens, or from cadets, having little or no military experience; since the senior second lieutenants, or junior first lieutenants of the line, will not sacrifice rank to enter the ordnance as the lowest second lieutenant; and thus all the advantages of military knowledge and general experience

which result from the grade of first lieutenants, would be lost in a department where it is essentially necessary.

2d. For your satisfaction, it may be proper to exhibit the positions which these thirty-six officers would occupy, or the points in the country where their services would be required; as by this a farther judgment may be formed of the necessity of that force:

	GRADES OF OFFICERS.					
	Colonel.	Lt. Colonel.	Majors.	Captains.	1st Lieut's.	Total.
1st. Engaged in the Ordnance office, Washington, in the general superintendence of the department -	1	-	-	1	1	3
2d. Engaged in the periodical inspection of the whole material of the department, distributed in twenty-four different posts throughout the country.						
3d. Engaged in the periodical inspection of cannon, shot, and shells, gun-carriages, &c., made at the six foundries, and intended for the gradual armament of the old and new fortifications, and for the field.						
4th. Engaged in the periodical inspection and reception of swords, pistols, rifles, and muskets, at eight private armories.						
5th. Engaged in the periodical inspection for preservation of gun-carriages, cannon, shot, and shells, now at, and yet to be transported from time to time to the fortifications for their armament - - -	-	1	2	-	-	3
6th. Engaged in the command and other service at the two great arsenals, Watervliet, in New York, and Allegany, at Pittsburg, Pennsylvania - -	-	-	2	-	6	8
7th. Engaged in the command and other service at the remaining twenty-two posts in the department -	-	-	-	9	13	22
	1	1	4	10	20	36

Leaving but one officer to a post; from which it is plain that the proposed number should rather be increased than diminished. Yet, by a system of instruction for the junior officers of other corps in ordnance affairs; by suitable temporary details, which might be made from time to time from the line of the army; this deficiency of officers might be remedied, without a larger organization, at least for the present.

3d. You are aware of the straitened circumstances under which the officers of the ordnance labor, along with their brethren in other corps of the army, as to compensation; and will no doubt propose suitable measures of relief. By the act of the 14th of May, 1812, the officers of this department were allowed the rank and pay of infantry officers, with additional rations; captains being allowed forage. The act of the 8th February, 1815, authorized the pay of dragoons, forage being excepted to

those below the rank of field officers. Experience has shown that ordnance officers are required to be mounted to accomplish their duties, whether at various points immediately around their posts, with which they are generally in constant communication on matters of public business, or whether they be with an army in the field; and it is especially necessary now, as the regulations allow no transportation of officers, even though on urgent public business, for distances under twenty miles.

In completing this very general view of the concerns of the Ordnance department, I would beg leave to call your farther attention to the situation of the clerks in this office as to salary, and to request that they may be put on a footing of equality, in this respect, with those in the offices of the Quartermaster General, the Paymaster General, and Subsistence department. This seems but a measure of justice to these faithful and efficient public agents, not only because they are in the performance of duties equally arduous, of equal complicacy and importance with those of the other subordinate departments, but because of their present inadequate compensation. For these reasons, no doubt is entertained but that your kind attention will be drawn to this subject, in which, among others, the welfare of the department is also concerned.

I have the honor to be, sir,
Your obedient servant,
GEO. BOMFORD,
Colonel of Ordnance.

Hon. J. R. Poinsett,
Secretary of War.

An Act providing for the increase of the Ordnance Department.

Section 1. *Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,* That the President of the United States be, and he is hereby, authorized to add to the Ordnance department, whenever he may deem it expedient to increase the same, two majors and twenty first lieutenants; that after the said increase shall have been made, all vacancies happening in the Ordnance department shall be filled from the line of the army; that the pay and emoluments of the officers of the said department shall be the same as those allowed to the officers of the regiments of dragoons; and that they shall be appointed by the President, by and with the advice and consent of the Senate.

Sec. 2. *Be it further enacted,* That so much of the 4th section of the act passed April 5, 1832, for the organization of the Ordnance department, as authorizes the officers of ordnance to receive the same pay and emoluments now allowed to artillery officers, be construed to include the ten dollars per month additional pay to every officer in the actual command of a company, as compensation for the duties and responsibilities with respect to clothing, arms, and accoutrements of the company, under the authority of the second section of the act passed 2d March, 1827, giving further compensation to the captains and subalterns of the army of the United States, in certain cases: *Provided,* That the officers of the Ordnance department, claiming the compensation for such duties and re-

sponsibilities, shall have been actually in the command of enlisted men of the ordnance, and shall have incurred the aforesaid responsibilities in the same manner as officers commanding companies in the line of the army.

SEC. 3. *Be it further enacted,* That all officers and enlisted men of the Ordnance department shall be subject to the rules and articles of war.

SEC. 4. *And be it further enacted,* That the compensation hereafter to be allowed to such ordnance storekeepers as shall be designated as paymasters, shall not exceed the pay and allowances of a captain of ordnance; and that the chief of the Ordnance department shall have power to frank letters and packages having reference to the public service of the Ordnance department.